

NAG9-600



# Report

UDR-TR-94-88

## COLLECTION, PROCESSING, AND REPORTING OF DAMAGE TOLERANT DESIGN DATA FOR NON- AEROSPACE STRUCTURAL MATERIALS

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N94-36435

Unclass

G3/82 0013469

FINAL REPORT  
June 1994

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Submitted to:

National Aeronautics and Space Administration  
Johnson Space Center  
Houston, TX

(NASA-CR-196046) COLLECTION, PROCESSING, AND REPORTING OF DAMAGE TOLERANT DESIGN DATA FOR NON-AEROSPACE STRUCTURAL MATERIALS  
Final Report (Dayton Univ. Research Inst.) 1364 p



## ***Abstract***

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This report describes the organization, format and content of the NASA Johnson damage tolerant database which was created to store damage tolerant property data for non-aerospace structural materials. The database is designed to store fracture toughness data ( $K_{Ic}$ ,  $K_{IIc}$ ,  $J_{Ic}$  and  $CTOD_{Ic}$ ), resistance curve data ( $K_R$  vs.  $\Delta a_{eff}$  and  $J_R$  vs.  $\Delta a_{eff}$ ), as well as subcritical crack growth data ( $a$  vs.  $N$  and  $da/dN$  vs.  $\Delta K$ ). The database contains complementary material property data for both stainless and alloy steels, as well as for aluminum, nickel, and titanium alloys which were not incorporated into the Damage Tolerant Design Handbook database.

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## ***Foreword***

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The University of Dayton performed this work for the National Aeronautics and Space Administration (NASA), Johnson Space Flight Center, under grant number NAG 9-600. Mr. Royce Forman of NASA Johnson was the technical monitor for the grant. The principal investigator for the University of Dayton was Dr. J.P. Gallagher of the Structural Integrity Division of the Research Institute. Engineering and computer support was provided by Ms. P.D. Huber and Mr. D.A. Skinn, respectively. Data entry was performed by undergraduate student Ms. T.A. Riley.





# Section 1

## *Introduction*

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The objective of this work was to collect, evaluate, store and report damage tolerant design property data that engineers use to calculate the fracture resistance of the shuttle launcher and other fracture critical ground equipment which support the space effort. Materials of interest were those used in the pressure vessel and piping industry, in the marine industry, in the ground vehicle industry, and in the construction industry. Emphasis was placed on collecting two different types of properties - those that are associated with residual strength calculations and those that are associated with fatigue crack growth life calculations.

Section 2 summarizes the damage tolerant information available in the NASA Johnson database as a function of material alloy type, and Section 3 describes the data review and acceptance criteria utilized. Section 4 discusses the organization and format of NASA Johnson damage tolerant database which was created to store the material property data which were collected. Appendices A through E present the fatigue crack growth rate ( $da/dN$  vs.  $\Delta K$ ) and resistance curve ( $K_R$  vs.  $\Delta a_{eff}$  and  $J_R$  vs.  $\Delta a_{eff}$ ) data in graphical format for the stainless steels, alloy steels, aluminum, nickel, and titanium material alloys, respectively.



## Section 2

### ***Database Content***

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This section provides a summary of the damage tolerant information available in the NASA Johnson database as a function of material type.

#### **2.1 General**

The test data contained in the NASA Johnson database were obtained from a variety of sources, including both individual reports and other fracture mechanics databases. Major databases obtained include: the Electric Power Research Institute (EPRI) Database for Environmentally Assisted Cracking (EDEAC), the Nuclear Regulatory Commission's (NRC) Piping Fracture Mechanics Database (PIFRAC), the Marine Structural Steel Toughness Data Bank, and a collection of data from the David Taylor Research Center (Navy).

A column is provided in each database table which contains a reference code identifying the source of the test data. The first two or three characters identify the organization or journal from which the data was obtained. Since the EDEAC database recorded the original sources of its data, those data included in the NASA Johnson database also reference the original source. Table 1 lists the reference codes and corresponding references which correspond to data obtained from the EDEAC database. Table 2 provides a similar listing for all other data included in the NASA Johnson database.



**Table 1**  
**References Included from the EPRI EDEAC Database**

EPADD1	"THE EFFECT OF STRESS RATIO ON THE ELEVATED TEMPERATURE FATIGUE CRACK PROPAGATION OF TYPE 304 STAINLESS STEEL", JAMES, L.A., WESTINGHOUSE HANFORD COMPANY; RICHLAND - WA 99352, NUCLEAR TECHNOLOGY; VOL. 14, NO. 2, MAY 1972, PP. 163-167.
EPADD2	"FATIGUE CRACK PROPAGATION BEHAVIOR OF TYPE 304 STAINLESS STEEL AT ELEVATED TEMPERATURES", JAMES, L.A.; SCHWENK, E.B., JR., WADCO CORPORATION; BATTELLE PACIFIC NORTHWEST LABORATORIES, METALLURGICAL TRANSACTIONS; VOL. 2, FEBRUARY 1971, PP. 491-496.
EPADD3	DIRECT ACCESS, JAMES, T.L., ROLLS ROYCE AND ASSOCIATES LIMITED; ENGLAND, ICCGR.
EPADD4	"ENVIRONMENTALLY ASSISTED CRACK GROWTH IN LIGHT WATER REACTOR MATERIALS (1981)", BAMFORD, W.H.; CESCHINI, L.J.; MOON, D.M., WESTINGHOUSE ELECTRIC CORPORATION; PITTSBURGH - PA 15230, NAVAL RESEARCH LABORATORY; ANNUAL TECHNICAL PROGRESS REPORT, 1981.
EPADD5	"THE EFFECT OF FAST NEUTRON IRRADIATION UPON THE FATIGUE CRACK PROPAGATION BEHAVIOR OF TWO AUSTENITIC STAINLESS STEELS", JAMES, L.A., WESTINGHOUSE HANFORD COMPANY; RICHLAND - WA 99352, JOURNAL OF NUCLEAR MATERIALS; VOL. 59, NO. 2, 1976, PP. 183-191.
EPADD6	DIRECT ACCESS, ATKINSON, J.D.; COLE, S.; FORREST, J.E., CENTRAL ELECTRICITY RESEARCH LABORATORIES; ENGLAND, ICCGR
EPADD7	KURATH, PETER, AMTEL, UNIVERSITY OF ILLINOIS, 100E. TALBOT LABORATORY, 104 SOUTH WRIGHT STREET, URBANA, IL 61801.
EPAMZ1	DIRECT ACCESS, AMZALLAG, C., FRAMATOME; CREUSOT-LOIRE - FRANCE, ICCGR.
EPANG1	DIRECT ACCESS, ANGELINO, G., CISE; MILAN - ITALY, ICCGR.
EPBAB1	"CORROSION FATIGUE CHARACTERIZATION OF REACTOR PRESSURE VESSEL STEELS(PHASE 1, 1979-1981)", VAN DER SLUYS, W.A., BABCOCK AND WILCOX COMPANY; A MCDERMOTT COMPANY - 1562 BEESON ST. - ALLIANCE - OH 44601.
EPBAB2	DIRECT ACCESS, BABCOCK/HITACHI K.K., MPC.
EPBAB3	DIRECT ACCESS, VAN DER SLUYS, W.A., BABCOCK & WILCOX COMPANY, A MCDERMOTT COMPANY, 1562 BEESON STREET, ALLIANCE, OHIO, 44601.
EPBAB5	DIRECT ACCESS, BULLOCH, J.H., BABCOCK POWER LIMITED; SCOTLAND, ICCGR.
EPBAP1	"FATIGUE CRACK PROPAGATION IN NON-IRRADIATED AND IRRADIATED LOW ALLOY STEELS", HALL, J.F., BETTIS ATOMIC POWER LABORATORY; WEST MIFFLIN - PA, ERDA WAPD-TM-1176; U.S. ENERGY RESEARCH AND DEVELOPMENT ADMINISTRATION REPORT.

1. The first part of the document is a letter from the President of the United States to the Congress, dated January 1, 1861.



2. The second part of the document is a letter from the President of the United States to the Congress, dated January 1, 1861.



**Table 1 - (continued)**  
**References Included from the EPRI EDEAC Database**

EPBAT1	"FATIGUE CRACK GROWTH RATES IN A NI-CR-MO-V TURBINE DISC STEEL EXPOSED TO 12M NAOH ENVIRONMENT", RUNGTA, R.; BEGLEY, J.A., BATTELLE COLUMBUS LABORATORIES; WESTINGHOUSE ELECTRIC CORPORATION, MATERIAL-ENVIRONMENT INTERACTIONS IN STRUCTURAL AND PRESSURE CONTAINMENT SERVICE, MPC-15.
EPBER1	DIRECT ACCESS, BERNARD, J.L.; AMZALLAG, C., FRAMATOME - UNIREC.
EPBPL1	DIRECT ACCESS, KERR, D., BABCOCK POWER LIMITED, ICCGR.
EPCE01	DIRECT ACCESS, ATKINSON, J.D., CENTRAL ELECTRICITY RESEARCH LABS., SURREY, ENGLAND.
EPCRI1	DIRECT ACCESS, TAKAKU, H.; KUSANAGI, H.; KIMURA, H., CENTRAL RESEARCH INSTITUTE OF ELECTRIC POWER INDUSTRY.
EPCUL1	DIRECT ACCESS, CULLEN, W.H., MATERIALS ENGINEERING ASSOCIATES; LANHAM - MD 20706.
EPCUL2	"STRUCTURAL INTEGRITY OF WATER REACTOR PRESSURE BOUNDARY COMPONENTS", CULLEN, W.H.; TAYLOR, NAVAL RESEARCH LABORATORY, ICCGR.
EPEFM1	"FATIGUE CRACK GROWTH RATE PROPERTIES OF SA508 AND SA533 PRESSURE VESSEL STEELS AND SUBMERGED ARC WELDMENTS IN ROOM AND ELEVATED TEMPERATURE AIR ENVIRONMENTS", LOGSDON, W.A.; LIAW, P.K., METALLURGY DEPT; WESTINGHOUSE RESEARCH AND DEVELOPMENT, CENTER; PITTSBURGH, PA., ENGINEERING FRACTURE MECHANICS; VOL. 22, NO. 3, 1985, PP. 509-526.
EPFUN1	DIRECT ACCESS, FUNADA, T.; HATTORI, T., MITSUBISHI HEAVY INDUSTRIES; LTD., MPC.
EPFUN2	DIRECT ACCESS, FUNADA, T., MITSUBISHI HEAVY INDUSTRIES, LTD.
EPGAB1	DIRECT ACCESS, GABETTA, G., CISE, MILANO, ITALY.
EPGEF1	"CRACK GROWTH STUDIES ON A CARBON STEEL IN OXYGENATED HIGH-PRESSURE WATER AT ELEVATED TEMPERATURES", PRATER, T.A.; COFFIN, L.F., GENERAL ELECTRIC COMPANY; SCHENECTADY - NY, AMERICAN SOCIETY OF METALS; TO BE PUBLISHED.
EPGEF2	"FATIGUE CRACK GROWTH IN NUCLEAR REACTOR PIPING STEELS", BROTHERS, A.J., GENERAL ELECTRIC COMPANY; ATOMIC POWER EQUIPMENT DEPARTMENT - SAN JOSE - CA.
EPGER1	DIRECT ACCESS, GERSCHA, A., KRAFTWERK UNION AG; WEST GERMANY, ICCGR.
EPGES1	"FATIGUE CRACK GROWTH IN NUCLEAR REACTOR PIPING STEELS", BROTHERS, A.J., GENERAL ELECTRIC COMPANY; ATOMIC POWER EQUIPMENT DEPARTMENT - SAN JOSE - CA, GEAP-5607; MARCH 1968.





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EPGES3	"MECHANISMS OF ENVIRONMENTALLY ENHANCED CRACKING IN ALLOY/ENVIRONMENT SYSTEMS PECULIAR TO POWER GENERATION INDUSTRIES", FORD, P.; SILVERMAN, M., GENERAL ELECTRIC COMPANY; RESEARCH AND DEVELOPMENT LABORATORY - SCHENECTADY - NY, EPRI RP1332-1; SECOND ANNUAL REPORT.
EPGES4	"FATIGUE CRACK GROWTH IN PIPING AND RPV STEELS IN SIMULATED BWR WATER ENVIRONMENT", HALE, D.A.; YUEN, J.L.; GERBER, T.L., GENERAL ELECTRIC COMPANY; NUCLEAR ENGINEERING DIVISION - SAN JOSE - CA, GEAP-24098.
EPISH1	IINO, N.; KOBAYASHI, R., ISHIKAWAJIMA-HARIMA HEAVY INDUSTRIES CO., LTD., DATA BOOK ON FATIGUE CRACK GROWTH RATES ON METALLIC MATERIALS; JSMS, 1983.
EPJAE1	DIRECT ACCESS, KONDO, T.; NAKAJIMA, H.; TSUJI, H.; EBINE, N., JAPAN ATOMIC ENERGY RESEARCH INSTITUTE.
EPJAE2	DIRECT ACCESS, KONDO, T.; NAKAJIMA, H.; TSUJI, H.; EBINE, N., JAPANESE ATOMIC ENERGY RESEARCH INSTITUTE, JAPANESE DOMESTIC ROUND ROBIN TEST.
EPJAE3	DIRECT ACCESS, KONDO, T.; NAKAJIMA, H.; TSUJI, H., JAPAN ATOMIC ENERGY RESEARCH INSTITUTE, ICCGR FIRST ROUND ROBIN TEST (LOW R).
EPJAE4	DIRECT ACCESS, KONDO, T.; NAKAJIMA, H., JAPAN ATOMIC ENERGY RESEARCH INSTITUTE.
EPJAE5	DIRECT ACCESS, JAPAN ATOMIC ENERGY RESEARCH INSTITUTE, MPC.
EPJAM1	DIRECT ACCESS, JAMES, L.A.
EPJAP1	DIRECT ACCESS, JAPAN STEEL WORKS, MPC.
EPJNM1	"FATIGUE CRACK GROWTH RATES OF IRRADIATED PRESSURE VESSELS IN SIMULATED NUCLEAR COOLANT ENVIRONMENT", CULLEN, W.H.; WATSON, H.E.; TAYLOR; LOSS, F.J., MATERIALS ENGINEERING ASSOCIATES; NAVAL RESEARCH LABORATORY, JOURNAL OF NUCLEAR MATERIALS; VOL. 96, 1981, PP. 261-268.
EPKOB1	KOBAYASHI, K., KAWASAKI STEEL CORPORATION, KAWASAKI STEEL TECHNICAL REPORT; VOL. 12, NO. 1, 1980, PP. 65-77.
EPKWU1	KLAUSNITZER, E., KWU ERLANGEN.
EPMEA1	"THE TEMPERATURE DEPENDENCE OF FATIGUE CRACK GROWTH RATES OF A 351 CF8A CAST STAINLESS STEEL IN LWR ENVIRONMENTS", CULLEN, W.H.; TAYLOR, R.E.; TORRONEN, K.; KEMPPAINEN, M., (1) MATERIALS ENGINEERING ASSOCIATES, INC.; 9700B GEORGE PALMER HIGHWAY; LANHAM, MD 20706; (2) TECHNICAL RESEARCH CENTRE OF FINLAND, 02150 ESPOO IS, FINLAND, USNRC REPORT NUREG/CR-3546; MEA TECHNICAL REPORT MEA-2030.



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EPMEA2	"FATIGUE CRACK GROWTH OF A508 STEEL IN HIGH TEMPERATURE, PRESSURIZED REACTOR GRADE WATER", CULLEN, W.H.; PROVENZANO, V.; TORRONEN, K.; WATSON, H.E.; LOSS, F.J., MATERIALS ENGINEERING ASSOCIATES; NAVAL RESEARCH LABORATORY; TECHNICAL RESEARCH CENTER OF FINLAND; NAVAL RESEARCH LABORATORY, NUREG/CR 0969.
EPMEA3	"WAVEFORM, FREQUENCY, AND TEMPERATURE EFFECTS ON FATIGUE CRACK GROWTH RATES OF PRESSURE VESSEL STEELS IN HIGH TEMPERATURE, REACTOR GRADE WATER", CULLEN, W.H.; TAYLOR; WATSON, H.E.; LOSS, F.J., MATERIALS ENGINEERING ASSOCIATES; NAVAL RESEARCH LABORATORY; NAVAL RESEARCH LABORATORY, ENSA-81-002.
EPMEA4	"EFFECTS OF IRRADIATION ON FATIGUE CRACK GROWTH RATES OF PRESSURE VESSEL STEELS IN HIGH TEMPERATURE, REACTOR GRADE WATER", CULLEN, W.H.; TAYLOR; WATSON, H.E.; LOSS, F.J., MATERIALS ENGINEERING ASSOCIATES; NAVAL RESEARCH LABORATORY; ENSA-81-003.
EPNAG1	NAGATA, N.; KATADA, Y., NATIONAL RESEARCH INSTITUTE FOR METALS, 104TH ANNUAL MEETING OF THE IRON AND STEEL INSTITUTE OF JAPAN; VOL. 68, NO. 12, 1982, P. 265.
EPNAG2	DIRECT ACCESS, NAGATA, N.; KATADA, Y., NATIONAL RESEARCH INSTITUTE FOR METALS.
EPNAK1	DIRECT ACCESS, NAKAJIMA, H.
EPNAV1	"STRUCTURAL INTEGRITY OF WATER REACTOR PRESSURE BOUNDARY COMPONENTS (4-6, 1980)", LOSS, F.J., NAVAL RESEARCH LABORATORY, NUREG/CR 1783; QUARTERLY PROGRESS REPORT, APRIL-JUNE, 1980.
EPNR01	"STRUCTURAL INTEGRITY OF WATER REACTOR PRESSURE BOUNDARY COMPONENTS (4-6, 1979)", LOSS, F.J., NAVAL RESEARCH LABORATORY, NUREG/CR 0943; QUARTERLY PROGRESS REPORT, APRIL-JUNE, 1979.
EPNR03	"STRUCTURAL INTEGRITY OF WATER REACTOR PRESSURE BOUNDARY COMPONENTS (9-12, 1979)", LOSS, F.J., NAVAL RESEARCH LABORATORY, NUREG/CR 1268; QUARTERLY PROGRESS REPORTS, OCTOBER-DECEMBER, 1979.
EPNRF1	"STRUCTURAL INTEGRITY OF WATER REACTOR PRESSURE BOUNDARY COMPONENTS", LOSS, F.J., NAVAL RESEARCH LABORATORY, NUREG/CR 1472; QUARTERLY PROGRESS REPORT, JANUARY-MARCH 1980.
EPNRI1	NATIONAL RESEARCH INSTITUTE FOR METALS; TRANSACTIONS, VOL. 19, NO. 4, 1977, PP. 183-199.
EPNRL1	"EFFECT OF HOLD TIME AND THERMAL AGING ON ELEVATED TEMPERATURE FATIGUE CRACK PROPAGATION IN AUSTENITIC STAINLESS STEEL", MICHEL, D.J.; SMITH, H.H., NAVAL RESEARCH LABORATORY; WASHINGTON - D.C. 20375, NRL 3627; NAVAL RESEARCH LABORATORIES MEMORANDUM.



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EPNRL2	"EFFECT OF HOLD TIME ON ELEVATED TEMPERATURE FATIGUE CRACK PROPAGATION IN TYPES 304 AND 316 STAINLESS STEELS", MICHEL, D.J.; SMITH, H.H., NAVAL RESEARCH LABORATORY, SYMPOSIUM ON CREEP-FATIGUE INTERACTION; 1976 ASME-MPC.
EPNRL3	MICHEL, D.J., U.S. NAVAL RESEARCH LABORATORY, NRL MEMORANDUM REPORT 3627.
EPNRL4	"FATIGUE CRACK GROWTH IN TYPE 316 STAINLESS STEEL AT HIGH TEMPERATURES", SHAHINIAN, P.; SMITH, H.H.; WATSON, H.E., NAVAL RESEARCH LABORATORY; METALLURGY DIVISION - WASHINGTON - D.C., JOURNAL OF ENGINEERING FOR INDUSTRY; VOL. 93, NO. 4, 1971, PP. 976-980.
EPNRL5	"FATIGUE CRACK PROPAGATION IN NEUTRON IRRADIATED TYPES 304 AND 308 STAINLESS STEELS", MICHEL, D.J.; SMITH, H.H., NAVAL RESEARCH LABORATORY; WASHINGTON - D.C. 20375, JOURNAL OF NUCLEAR MATERIALS; VOL. 71, NO. 1, 1977, PP. 173-177.
EPNRL6	MICHEL, D.J., U.S. NAVAL RESEARCH LABORATORY, JOURNAL OF NUCLEAR MATERIALS; VOL. 71, 1977, P. 173.
EPNSC1	DIRECT ACCESS, NIPPON STEEL CORPORATION, MPC.
EPOSU1	"THE EFFECT OF APPLIED POTENTIAL ON CORROSION FATIGUE CRACK GROWTH RATES OF A NI-CR-MO-V TURBINE DISC STEEL IN A ROOM TEMPERATURE 12 M NAOH SOLUTION", RUNGTA, R.; BEGLEY, J.A., OHIO STATE UNIVERSITY; WESTINGHOUSE ELECTRIC CORPORATION, CORROSION; VOL. 35, NO. 12, DECEMBER 1979, PP. 544-550.
EPRAS1	"LOW FREQUENCY FATIGUE-CRACK PROPAGATION IN TYPE 304 STAINLESS STEEL AT 482 AND 593", CRASKE, D.T.
EPRLK1	DIRECT ACCESS, MATSUMOTO, S.; NARUMOTO, A.; KOBAYASHI, K., RESEARCH LABORATORIES KAWASAKI STEEL CORP.
EPRR01	DIRECT ACCESS, NESS, A.P.; JAMES, T.L., ROLLS ROYCE AND ASSOCIATES LIMITED; ENGLAND, ICCGR.
EPRR02	DIRECT ACCESS, WILLIAMS, T.J.; JAMES, T.L., ROLLS ROYCE AND ASSOCIATES LIMITED; ENGLAND, ICCGR.
EPSC01	"CORROSION FATIGUE ASPECTS IN BWR PIPE CRACKING", SHOJI, T.; TAKAHASHI, H.; SUZUKE, M., SYMPOSIUM ON CORROSION PROBLEMS IN LIGHT WATER REACTORS; TO BE PUBLISHED IN THE PROCEEDINGS OF THE FIRST JOINT U.S.-JAPAN SYMPOSIUM.
EPSE01	"FATIGUE CRACK GROWTH RATES IN AUSTENITIC STAINLESS STEELS IN SIMULATED BWR WATER ENVIRONMENT", OSTENSSON, B.; GOTT, K., STUDSVIK ENERGITEKNIK; SWEDEN, E1-79/116; STUDSVIK.
EPSEF1	DIRECT ACCESS, ROSENGREN, A., STUDSVIK ENERGITEKNIK; SWEDEN, ICCGR.



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EPSMI1	DIRECT ACCESS, TOKIMASA, K.; TANAKA, K.; NAGANO, H.; TSUGE, H., SUMITOMO METAL INDUSTRIES, LTD. (SMI), JOURNAL OF THE IRON AND STEEL INSTITUTE OF JAPAN; 5-69, 1983, S698.
EPTAK1	DIRECT ACCESS, TAKAKU, H.; KUSANAGI, H.; HIRANO, H.; KIMURA, H., CRIEPI.
EPTAK2	TAKAHASHI, H., TOHOKU UNIVERSITY.
EPTC01	"CRACK GROWTH BEHAVIOR OF AUSTENITIC STAINLESS STEEL UNDER BWR ENVIRONMENT", ASME, PORTLAND, OR, 1983, HISHIDA, M.; SAITOH, M.; HASEGAWA, K.; MATSUO, Y, TOSHIBA CORP.; HITACHI LTD.; TOKYO ELECTRIC POWER CO.
EPTC02	"CRACK GROWTH BEHAVIOR OF TYPE 304 STAINLESS STEEL IN OXYGENATED 290 C PURE WATER UNDER LOW FREQUENCY CYCLIC LOADING", KAWAKUBO, T.; HISHIDA, M.; AMANO, K.; KATSUTA, M., TOSHIBA CORPORATION; RESEARCH AND DEVELOPMENT CENTER - 1 KOMUKAI TOSHIBACHO SAIUIAI-KU - KAWASAKI CITY - KANAGAWA 210 - JAPAN, CORROSION; NATIONAL ASSOCIATION OF CORROSION ENGINEERS, VOL. 36, 1980, PP. 638-647 PORT MEA-2030.
EPTC03	DIRECT ACCESS, KAWAKUBO, T., TOSHIBA CORPORATION; RESEARCH AND DEVELOPMENT CENTER - 1 KOMUKAI TOSHIBACHO SAIUIAI-KU - KAWASAKI CITY - KANAGAWA 210 - JAPAN, MPC.
EPTRC1	"RELIABILITY OF REACTOR MATERIALS PROGRAM, ANNUAL PROGRESS REPORT FOR 1982", TORRONEN, K.; SALONEN, S., TECHNICAL RESEARCH CENTRE OF FINLAND, METALS LABORATORY, TECHNICAL RESEARCH CENTRE OF FINLAND, RESEARCH REPORTS.
EPTRC2	DIRECT ACCESS, SALONEN, S.; TORRONEN, K., TECHNICAL RESEARCH CENTER OF FINLAND; FINLAND, ICCGR.
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EPUKF3	"THE INFLUENCE OF WATER CHEMISTRY ON FATIGUE CRACK PROPAGATION IN LWR PRESSURE VESSEL STEELS", SCOTT, P.M.; TRUSWELL, A.E., UNITED KINGDOM ATOMIC ENERGY AUTHORITY; HARWELL - ENGLAND, AERE-R 10201.
EPUKF4	DIRECT ACCESS, SCOTT, P.M.; TRUSWELL, A.E., UNITED KINGDOM ATOMIC ENERGY AUTHORITY; HARWELL - ENGLAND.
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## 2.2 Stainless Steel Material Data

Table 3 identifies the number of individual test records in the NASA Johnson database for each material property as a function of alloy type for stainless steel. Appendix A presents the FCG rate and R-curve data for the stainless steel alloys in a graphical format. This information is presented in the same format as that given in the USAF Damage Tolerant Design Handbook. Section 1.0 of the Handbook should be referenced for a discussion of the data presentation format.

**Table 3**  
**Material Property Summary for Stainless Steel**

ALLOY	$K_{Ic}$	$K_{Ic}$	$J_{Ic}$	$CTOD_{Ic}$	da/dN	$K_R$	$J_R$
CF8					19		
CF8A					42		
CF8M					35		
SA182 TYPE 304			1				8
SA240 TYPE 304			20				32
SA312 TYPE 304			3				3
SA351-CF3			19				19
SA351-CF8			16				16
SA351-CF8A			12				12
SA351-CF8M			6				6
SA358 TYPE 304			14				14
SA358 TYPE 304, CLASS 1			4				4
SA358-316L			4				4
SA376 TYPE 304			22				28
SA451-CF3			7				14
SA451-CF8			13				13
TYPE 304			27		216		27
TYPE 308					2		
TYPE 308L					11		
TYPE 316H					16		
TYPE 316L					60		



## 2.3 Alloy Steel Material Data

Table 4 identifies the number of individual test records in the NASA Johnson database for each material property as a function of alloy type for the alloy steels. Appendix B presents the FCG rate and R-curve data for the alloy steels in a graphical format. This information is presented in the same format as that given in the USAF Damage Tolerant Design Handbook. Section 1.0 of the Handbook should be referenced for a discussion of the data presentation format.

**Table 4**  
**Material Property Summary for Alloy Steel**

ALLOY	$K_{Ic}$	$K_{Ic}$	$J_{Ic}$	$CTOD_{Ic}$	da/dN	$K_R$	$J_R$
1CR-1MO					3		
2.25CR-1MO					5		
22 NI MO CR 37					7		
23 NI MO CR 36					3		
300M	1				4		
A106					9		23
A131 EH36				34			
A148-84					2		
A155			5				5
A36				101			
A471					2		
A508					185		
A516					20		7
A533					11		
A533/A508-NOT SPECIFIED							203
A572 GR 50 INTEGRA			4	9			
A572 GR50				7			
A588				12			
A710				7			
A710-A				11			
A710, GRADE A, CLASS 3			30				
AERMET 100	17				20	12	
ABS-EH32				16			
API 2Y GRADE 50T				27			
API 5LX65			1				1
BETHSTAR 50				2			
BETHSTAR 50 A808				7			
BS4360 GR50D				151			
C-MN STEEL					1		
HSLA-80				19	6		
HSLA-100			29				



**Table 4 - (continued)**  
**Material Property Summary for Alloy Steel**

ALLOY	K <sub>IC</sub>	K <sub>C</sub>	J <sub>IC</sub>	CTOD <sub>IC</sub>	da/dN	K <sub>R</sub>	J <sub>R</sub>
HY100			28		6		
HY130			63				
HY80			94	6			
LINDE 80							34
LINDE 80,HSST 61W-67W,71W							171
MAN-TEN					2		
MIL-S-16113, TYPE I					5		
MIL-S-22698, CLASS A					8		
MIL-S-23284, CLASS 1			2		2		
MIL-S-23284, CLASS 2			3		5		
MIL-S-23284, CLASS 5			4				
SA106 GRADE B			56				56
SA106 GRADE C			36				57
SA333					13		
SA333 GRADE 6			17				19
SA516 GRADE 70			21				21
SAE 1045					2		





## 2.4 Aluminum Material Data

Table 5 identifies the number of individual test records in the NASA Johnson database for each material property as a function of alloy type for aluminum. Appendix C presents the FCG rate and R-curve data for the aluminum alloys in a graphical format. This information is presented in the same format as that given in the USAF Damage Tolerant Design Handbook. Section 1.0 of the Handbook should be referenced for a discussion of the data presentation format.

**Table 5**  
**Material Property Summary for Aluminum**

ALLOY	$K_{Ic}$	$K_{Ic}$	$J_{Ic}$	$CTOD_{Ic}$	$da/dN$	$K_R$	$J_R$
2090			5				
2090-In (EXP)			4				
2124	9				29	14	
7050	8				42	14	
7075	6						
7475	3				12	8	
8090					16		



## 2.5 Nickel Material Data

Table 6 identifies the number of individual test records in the NASA Johnson database for each material property as a function of alloy type for nickel. Appendix D presents the FCG rate and R-curve data for the nickel alloys in a graphical format. This information is presented in the same format as that given in the USAF Damage Tolerant Design Handbook. Section 1.0 of the Handbook should be referenced for a discussion of the data presentation format.

**Table 6**  
**Material Property Summary for Nickel**

ALLOY	$K_{Ic}$	$K_{Ic}$	$J_{Ic}$	$CTOD_{Ic}$	da/dN	$K_R$	$J_R$
INCOLOY 800					26		
INCONEL 600			17		27		17
INCONEL 718					10	6	
INCONEL X-750					16		

## 2.6 Titanium Material Data

Table 7 identifies the number of individual test records in the NASA Johnson database for each material property as a function of alloy type for titanium. Appendix E presents the FCG rate and R-curve data for the titanium alloys in a graphical format. This information is presented in the same format as that given in the USAF Damage Tolerant Design Handbook. Section 1.0 of the Handbook should be referenced for a discussion of the data presentation format.

**Table 7**  
**Material Property Summary for Titanium**

ALLOY	$K_{Ic}$	$K_{Ic}$	$J_{Ic}$	$CTOD_{Ic}$	da/dN	$K_R$	$J_R$
6-2-2-2-2	56				118	40	



## Section 3

### *Data Review and Acceptance Criteria*

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All data available for the NASA Johnson database were systematically reviewed and analyzed. The principal data acceptance criteria were based on criteria established by the American Society for Testing and Materials (ASTM); these criteria are embedded within ASTM standards for test methods and practices. Table 8 lists those standards used to provide criteria for  $K_{Ic}$  and  $J_{Ic}$  data, for R-curve data, and for FCG rate data. ASTM literature was also reviewed to establish criteria based on typical engineering practice for the other types of data collected and reported.

**Table 8**  
**Applicable List of Standards Found in the ASTM Book of Standards**

ASTM STD	TITLE
E399-90	Standard Test Method for Plane-Strain Fracture Toughness of Metallic Materials
E561-86	Standard Practice for R-Curve Determination
E647-91	Standard Test Method for Measurement of Fatigue Crack Growth Rates
E813-89	Standard Test Method for $J_{Ic}$ , A Measure of Fracture Toughness
E1152-87	Standard Test Method for Determining J-R Curves

The following subsections summarize the data acceptance criteria for each of the damage tolerant properties stored in the NASA Johnson database.

#### **3.1 Fracture Toughness ( $K_{Ic}$ )**

The ASTM Standard E399 is the current procedure for determining critical plane-strain fracture toughness,  $K_{Ic}$ , for metals. All  $K_{Ic}$  fracture toughness data included in the database were generated using ASTM Standard E399. These data were also checked against the criteria for specimen thickness (B) and crack length (a), i.e.,



$$B, a > 2.5 \left( \frac{K_{IC}}{\sigma_{ys}} \right)^2 \quad (1)$$

where  $\sigma_{ys}$  is the tensile yield strength. A column is included in the NASA Johnson database which checks this requirement.

### 3.2 Fracture Toughness ( $K_{IC}$ )

Presently, there is not an approved ASTM standard for determination of the plane stress fracture toughness,  $K_{IC}$ . Section 2.2 of the USAF Damage Tolerant Design Handbook discusses current industry standards with regard to the collection and validity of  $K_{IC}$  data. The NASA Johnson database does not, at present, contain any  $K_{IC}$  data, although the capability for storing such data does exist.

### 3.3 Fracture Toughness ( $J_{IC}$ )

Non-linear fracture mechanics has been successfully utilized to characterize tearing type fractures and fractures that occur in the presence of large-scale yielding. ASTM Standard E813-89 provides specific guidelines and acceptance criteria for determination of the fracture toughness parameter  $J_{IC}$ . Though many tests were reviewed which were performed in accordance with Standard E813-89, very few were actually determined to be valid tests by the criteria provided in E813-89. Only those tests determined to be valid by this standard were included in the NASA Johnson database.

### 3.4 Fracture Toughness ( $CTOD_{IC}$ )

Although ASTM Standard E1290, "Standard Test Method for Crack-Tip Opening Displacement (CTOD) Fracture Toughness Measurement" was issued in 1989, all CTOD fracture toughness data available for inclusion in the NASA Johnson database were generated prior to its issuance. At that time, the industry standard for generating CTOD data was to follow guidelines established within Standard BS5762:1979 from the British Standards Institution in London, England, titled "Methods for Crack Opening Displacement (COD) Testing". The majority of





CTOD data included in the NASA Johnson database were obtained in accordance with British Standard BS5762. It should be noted that ASTM Standard E1290-89 for CTOD testing was based on this British standard. Additional effort would be required to determine if the CTOD fracture toughness data available in the NASA Johnson database meet the current ASTM Standard E1290.

### **3.5 Fatigue Crack Growth Rate Behavior**

ASTM Standard E647 covers the collection and reporting of FCG rate data. Most of the FCG rate data included in the database were collected and reduced utilizing the guidelines and methods described by ASTM E647. For center cracked panel (CCP) and compact tension (CT) specimen geometries, the ASTM Standard describes 11 explicit criteria for validating the data; these criteria are summarized in Table 9. A field is included in the NASA Johnson database which notes the  $da/dN$  data that failed to meet these ASTM criteria. Section 2.5 in the USAF Damage Tolerant Design Handbook should be referenced for further information regarding FCG data reduction and reporting procedures.



Table 9  
Criteria Checks for Fatigue Crack Growth Rate Data

Criteria No.	ASTM E647 Paragraph	Specimen Type	Criterion
1	7.1.3.1	CT	$\frac{W}{20} \leq B \leq \frac{W}{4}$
	7.1.3.2	CCP	$B \leq \frac{W}{8}$
2	Figure 1	CT CCP	W ≥ 1.00 inch. None
3	8.8.2	CT and CCP	If B/W ≥ 0.15 need front and back crack lengths.
4	7.1.1 7.1.2	CT CCP	$a_N \geq 0.2W$ $2a_N \geq 0.2W$ if compliance crack length measurement technique used
5	8.3.1	CT and CCP	$a_1 \geq 0.1B, h,$ or 0.04 inch, whichever is greater
6	8.8.3	CT and CCP	(Front Crack Length-Back Crack Length) < 0.025 W or 0.25 B, whichever is less.
7	8.8.1.1 8.8.1.2	CT CCP	if $0.25 \leq a/W \leq 0.40$ then $\Delta a \leq 0.04 W$ if $0.40 \leq a/W \leq 0.60$ then $\Delta a \leq 0.02 W$ if $a/W \geq 0.60$ then $\Delta a \leq 0.01 W$ if $2a/W \leq 0.60$ then $\Delta a \leq 0.03 W$ if $2a/W > 0.60$ then $\Delta a \leq 0.02 W$
8	8.8.1.3	CT and CCP	$\Delta a \geq 0.01$ inch, except in threshold region
9	7.2.1 7.2.2	CT CCP	$W - a \geq \frac{4}{\pi} (K_{max}/TYS)^2$ $W - a \geq 1.25 P_{max}/(B \cdot TYS)$
10	8.5.1	CT and CCP	<u>In Test</u> , Load Variation $0 \leq \left  \frac{P_{max, i+1} - P_{max, i}}{P_{max, i}} \right  \leq 0.10$
11	8.3.2	CT and CCP	<u>In Precracking</u> (1) $\frac{P_{max, i+1} - P_{max, i}}{P_{max, i}} \leq 0.20$ , and (2) $\Delta a \geq (3/\pi)(K'_{max}/TYS)^2$

CT = Compact Tension  
CCP = Center Cracked Panel  
B = Specimen Thickness  
W = Specimen Width  
a = Crack Length  
 $a_N$  = Notch Size  
 $a_1$  = Fatigue Precrack Length

h = Height of Specimen  
 $\Delta a$  = Change in Crack Length  
 $P_{max}$  = Maximum Load  
 $K_{max}$  = Maximum Stress Intensity  
TYS = Tensile Yield Strength  
 $K'_{max}$  = Maximum Stress Intensity at Smaller Crack Length Being Considered



### 3.6 Resistance Curve, $K_R$

R-curves characterize the resistance to fracture of materials during incremental slow stable crack extension and result from growth of the plastic zone as the crack extends. For  $K_R$  curves to be valid, the remaining specimen ligament in the plane of the crack must be predominantly elastic. ASTM Standard E561 requires the net section stress based on the physical crack size be less than the yield strength of the material for CCP specimens, or

$$\sigma_{net} < \sigma_{ys} \quad ; \quad \sigma_{net} = \frac{P_{cr}}{B(W-2a)} \quad (2)$$

For CT specimens, the validity criteria is given by

$$W-a \geq \frac{4}{\pi} \left( \frac{K_{max}}{\sigma_{ys}} \right)^2 \quad (3)$$

where  $K_{max}$  is calculated using the physical crack size.

All of the  $K_R$ -curve data available for the NASA Johnson database were obtained using a compliance based technique for measuring the crack length. The compliance based technique provides a direct measure of the effective crack length, and therefore only the effective crack length, effective  $K_R$ , and  $\Delta a_{eff}$  are reported. As a result, the validity criteria given by Equations 2 and 3 were checked using the effective crack length. In some instances, this resulted in the last few data points of a particular data set to not meet the criteria given by Equation 3. However, previous experience has shown that the effect of using  $\Delta a_{eff}$  in Equation 3 may be such that the test in question may appear to be invalid, when in reality it is not. Based on this and the fact that the tests in question were completed in accordance with ASTM Standard E561, these R-curves, identified by an asterisk in the attached appendices, are included in the NASA Johnson database.



### 3.7 Resistance Curve, $J_R$

ASTM Standard E1152-87 covers the collection and reporting of  $J_R$  curve data. Only those  $J_R$  curve data collected in accordance with this standard are included in the NASA Johnson database.





# Section 4

## *Database Organization*

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This section describes the organization and format of the NASA Johnson damage tolerant database for structural steels and other non-aerospace materials which was created for the Johnson Space Flight Center.

### 4.1 Overview

The database has been designed to store fracture toughness data ( $K_{Ic}$ ,  $K_{c}$ ,  $J_{Ic}$  and  $CTOD_{Ic}$ ), resistance curve data ( $K_R$  vs.  $\Delta a_{eff}$  and  $J_R$  vs.  $\Delta a_{eff}$ ), and subcritical crack growth data ( $a$  vs.  $N$  and  $da/dN$  vs.  $\Delta K$ ). Material composition, test conditions, tensile test properties, and other pertinent information are also stored. The format of the NASA Johnson database has been patterned after the database used for the USAF Damage Tolerant Design Handbook. Modifications and enhancements were made to the USAF database to accommodate the data storage requirements for the NASA Johnson database. This approach has resulted in a substantial time and cost savings with regard to development of the damage tolerant database for NASA Johnson.

### 4.2 Database Format

The format of the NASA Johnson database is presented in Tables 10 through 12 for fracture toughness, fatigue crack growth, and fracture resistance curve data types, respectively. Note that those tables marked as "header" are common to the specific fracture toughness, fatigue crack growth, or fracture resistance curve data tables which immediately follow them. The fields shown in **bold type** are those which were added to the existing USAF aerospace database format to accommodate non-aerospace data for the NASA Johnson database. The following subsections describe the database storage formats for the fracture toughness, fatigue crack growth and fracture resistance curve test data.



#### 4.2.1 Fracture Toughness Data

Fracture toughness information may be stored in the database as either  $K_{Ic}$ ,  $K_{Ct}$ ,  $J_{Ic}$  or  $CTOD_{Ic}$  property data. Specific test information for each fracture toughness type is contained in separate database "tables". The format of these "tables" is presented in Tables 10 and 10a-d. The variable names shown in these tables are specific to individual columns in the database. These columns were chosen to permit the maximum amount of information possible to be stored relative to a specific fracture toughness test. Certain test information have been coded to simplify data storage requirements, such as data and material type, product form and composition. Coded values are defined in Tables 10 and 10a-d where applicable.

#### 4.2.2 Fatigue Crack Growth Data

Fatigue crack growth (FCG) data may be stored in either raw  $a$  vs.  $N$ , or reduced  $da/dN$  vs.  $\Delta K$  format. The database formats for storage of these FCG data are shown in Tables 11 and 11a-d. Storage of FCG data differs from that of fracture toughness data in that the database contains two "tables" for each type of FCG data available ( $a$  vs.  $N$  or  $da/dN$  vs.  $\Delta K$ ). The crack growth "test" table is designed to store specific test condition information as shown in Tables 11, 11a and 11c. The crack growth "dat" table is designed to store the actual FCG data as shown in Tables 11b and 11d. Individual FCG tests are linked between these two "tables" by a unique record and specimen identification number.

#### 4.2.3 Resistance Curve Data

Resistance, or R-curve data may be stored in the database as either  $K_R$  vs.  $\Delta a_{eff}$  (linear elastic) or  $J_R$  vs.  $\Delta a_{eff}$  (elastic plastic). The format of the R-curve "tables" is similar to those for the FCG data in that a "test" and a "dat" table exist for each R-curve data type. The database formats for these R-curve tables are shown in Tables 12 and 12a-d. As with FCG tests, individual R-curve tests are linked between the "test" and "dat" tables by a unique record and specimen identification number.



**Table 10 - FRACTURE TOUGHNESS ( $K_{Ic}$ ,  $K_c$ ,  $J_{Ic}$ ,  $CTOD_{Ic}$ ) HEADER**

VARIABLE NAME	DEFINITION	TYPE	SIZE	CODE VALUES
RECID	Record ID	Intgr		
SPEC_ID	Specimen ID	Text	15	
DTYP	Data Type	Text	2	01= Fracture Toughness - $K_{Ic}$ 02= Fracture Toughness - $K_c$ 09= Fracture Toughness - $J_{Ic}$ 10= Fracture Toughness - $CTOD_{Ic}$
MATERIAL	Material Type	Text	2	01= Aluminum 02= Alloy Steel 03= Stainless Steel 04= Titanium 05= Nickel Based Super Alloys
ALLOY	Alloy	Text	25	
CONHT	Condition Heat	Text	85	
PROFRM	Product Form	Text	2	01= Sheet 02= Plate 03= Forging 04= Extrusion 05= Forged Bar 06= Billet 07= Casting 08= Round Bar 09= Welded & Stress Relieved 10= Weldment 11= Disk 12= Extruded Bar 13= Rolled Bar 14= Bar 15= Hand Forging 16= Pipe 17= Block 18= Nozzle 19= Ring 20= Shell 21= Nozzle Cutout 22= Nozzle Dropout 23= Nozzle Procurement Tests Ring 24= Weld Deposits Shell 25= Pipe, weld 26= Plate, weld 27= Plate, HAZ 28= Slab (Cast Flat) 29= Static Cast Pump Impeller 30= RPV Base Metal 31= HAZ
PROTHK	Product Thickness	Real		(Inches)



**Table 10 - FRACTURE TOUGHNESS ( $K_{Ic}$ ,  $K_{c}$ ,  $J_{Ic}$ , CTOD<sub>Ic</sub>) HEADER (continued)**

VARIABLE NAME	DEFINITION	TYPE	SIZE	CODE VALUES
<b>PROWID</b>	<b>Product Width</b>	<b>Real</b>		<b>(Inches)</b>
<b>CMP</b>	<b>Composition</b>	<b>Text</b>	<b>125</b>	<b>C= Carbon</b> <b>MN= Manganese</b> <b>P= Phosphorous</b> <b>S= Sulfur</b> <b>SI= Silicon</b> <b>NI= Nickel</b> <b>CR= Chromium</b> <b>MO= Molybdenum</b> <b>CU= Copper</b> <b>V= Vanadium</b> <b>TI= Titanium</b> <b>AL= Aluminum</b> <b>CO= Cobalt</b> <b>W= Tungsten</b> <b>AS= Arsenic</b> <b>SN= Tin</b> <b>ZR= Zirconium</b> <b>NB= Niobium</b> <b>SB= Antimony</b> <b>ZN= Zinc</b> <b>N= Nitrogen</b>
<b>WDPRO</b>	<b>Weld Process</b>	<b>Text</b>	<b>2</b>	<b>01= Shielded Metal Arc Weld (SMAW)</b> <b>02= Gas Tungsten Arc Weld (GTAW)</b> <b>03= Submerged Arc Weld (SAW)</b> <b>04= TSAW</b> <b>05= SMA</b> <b>06= GMAW</b> <b>07= FCA</b>
<b>PRE_HT</b>	<b>Preheat Temperature</b>	<b>Real</b>		<b>(F)</b>
<b>PST_HT</b>	<b>Postheat Temperature</b>	<b>Real</b>		<b>(F)</b>
<b>INT_HT</b>	<b>Interpass Temperature</b>	<b>Real</b>		<b>(F)</b>
<b>VOLT</b>	<b>Voltage</b>	<b>Real</b>		<b>(volts)</b>
<b>AMP</b>	<b>Amperage</b>	<b>Real</b>		<b>(amps)</b>
<b>HT_INP</b>	<b>Heat Input</b>	<b>Real</b>		<b>(KJ/in)</b>
<b>TRAV_SD</b>	<b>Travel Speed</b>	<b>Real</b>		<b>(imp)</b>





**Table 10 - FRACTURE TOUGHNESS ( $K_{Ic}$ ,  $K_{IIc}$ ,  $J_{Ic}$ , CTOD<sub>Ic</sub>) HEADER** (continued)

VARIABLE NAME	DEFINITION	TYPE	SIZE	CODE VALUES
JT_PREP	Joint Preparation	Text	2	01= V Groove 02= Single Bevel 03= Double Bevel 04= K Groove 05= Double V Groove
FIL_TYP	Filler Type/Name	Text	20	
FIL_SZ	Filler Size/Diam.	Real		(Inches)
TT_TEMP	Tensile Test Temperature	Real		(F)
TT_ORI	Tensile Test Orientation	Text	2	01= L-S 02= L-T 03= T-S 04= T-L 05= S-T 06= S-L 07= L-C 08= C-L 09= L-R 10= R-L 11= R-C 12= C-R 13= L-T45 14= CS 15= SC 16= RS 17= SR 21= AR 22= BA 23= RW 24= TR 25= WR 26= WCL 27= L 28= C
Y_STRENG	Yield Strength	Real		(ksi)
U_STRENG	Ultimate Strength	Real		(ksi)
PCT_ELON	Percent Elongation	Real		(%)
PCT_RA	Percent Reduction in Area	Real		(%)
S_TEMP	Sort Temperature	Real		(F)
TEMP	Fracture Toughness Test Temp	Real		(F)



**Table 10 - FRACTURE TOUGHNESS ( $K_{Ic}$ ,  $K_c$ ,  $J_{Ic}$ , CTOD<sub>Ic</sub>) HEADER** (continued)

VARIABLE NAME	DEFINITION	TYPE	SIZE	CODE VALUES
HEAT_NBR	Heat Number	Text	17	
SPEC_DES	Specimen Design	Text	2	01= Compact Tension 02= Center Cracked Panel Max Load Specified 03= Center Cracked Panel Max Stress Specified 04= 3 Pt Bend 06= Wedge Open Loading CT Eqn 07= Modified WOL (BL-WOL or WOL-SQ) 08= Cantilever Beam 09= Double Cantilever Beam 10= Tapered Double Cantilever Beam 11= Charpy 12= Cantilever SG (Side Grooved for Plane Strain Condition) 13= Part Thru Surface Crack 14= Single Edge Notch Tension 15= Wedge Open Loading Old CT Eqn 16= KB Bar 17= 4 Pt Bend 18= Bend Specimen (SG) 19= Part Thru Surface Flaw Max Stress Specified 20= Modified Compact Tension 22= CDCB (Side Grooved) 23= Compact Specimen (Side Grooved) 25= CT-50 Compound Specimen with Cylindrical Coordinates 26= Double Cantilever Beam (Side Grooved) 27= Double Notch Bend
SPEC_ORI	Specimen Orientation	Text	2	See TT_ORI Above
SPECTHK	Specimen Thickness	Real		(Inches)
SPECWD	Specimen Width	Real		(Inches)

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**Table 10a - FRACTURE TOUGHNESS;  $K_{Ic}$** 

Format Same As USAF Database

VARIABLE NAME	DEFINITION	TYPE	SIZE	CODE VALUES
FIN_C_L	Final Crack Length	Real		(Inches)
K1C_TYS	Validity Check for $K_{Ic}$ Based on Minimum Thickness	Real		$t \geq 2.5 * (K_{Ic} / YS)^{**2}$ (Inches)
K1C	$K_{Ic}$	Real		(ksi $\sqrt{\text{in}}$ )
DDATE	Test Date	Text	4	
REFE	Reference to Data Source	Text	50	
STANDARD	Test Standard	Text	15	
ST_DATE	Test Standard Year	Text	8	

**Table 10b - FRACTURE TOUGHNESS;  $K_c$** 

Format Same As USAF Database

NOTE: NO NON-AEROSPACE DATA AVAILABLE

VARIABLE NAME	DEFINITION	TYPE	SIZE	CODE VALUES
INT_C_L	Initial Crack Length	Real		(Inches)
FIN_C_L	Final Crack Length	Real		(Inches)
INT_STR	Initial Stress	Real		(ksi)
MAX_STR	Maximum Stress	Real		(ksi)
KAPP	K Apparent	Real		(ksi $\sqrt{\text{in}}$ )
KC	$K_c$	Real		(ksi $\sqrt{\text{in}}$ )
BUCKL	Buckling Restraint	Text	1	1= Restrained 2= Not Restrained
KAP_CRT	Check on Validity of KAPP Criteria	Text	1	1= Valid 2= Not Valid
KC_CRT	Check on Validity of KC Criteria	Text	1	1= Valid 2= Not Valid
DDATE	Test Date	Text	4	
REFE	Reference to Data Source	Text	50	



**Table 10c - FRACTURE TOUGHNESS;  $J_{Ic}$**   
NEW DATA FIELD TYPE

VARIABLE NAME	DEFINITION	TYPE	SIZE	CODE VALUES
SPECGV	Total Side Groove Depth	Real		(Inches)
INT_C_L	Initial Crack Length	Real		(Inches)
FIN_C_L	Final Crack Length	Real		(Inches)
TMOD	Critical Tearing Modulus	Real		
J_IC	$J_{Ic}$	Real		(in-lb/in <sup>2</sup> )
K_IC_CAL	$K_{Ic}$ as Calculated from $J_{Ic}$ (To be Det'd)	Real		(ksi $\sqrt{in}$ )
DDATE	Test Date	Text	4	
REFE	Reference to Data Source	Text	50	
STANDARD	Test Standard	Text	15	
ST_DATE	Test Standard Year	Text	8	





**Table 10d - FRACTURE TOUGHNESS; CTOD<sub>1c</sub>**  
NEW DATA FIELD TYPE

VARIABLE NAME	DEFINITION	TYPE	SIZE	CODE VALUES
SPECGV	Total Side Groove Depth	Real		(Inches)
INT_C_L	Initial Crack Length	Real		(Inches)
FIN_C_L	Final Crack Length	Real		(Inches)
CTOD_I	CTOD @ beginning of stable crack extension	Real		(Inches)
CTOD_C	CTOD @ beginning of unstable crack ext. (lower shelf)	Real		(Inches)
CTOD_U	CTOD @ beginning of unstable crack ext. (transition region)	Real		(Inches)
CTOD_M	CTOD @ plastic collapse plateau (plastic hinge)	Real		(Inches)
CTOD_IC	CTOD <sub>1c</sub>	Real		(Inches)
TMOD	Critical Tearing Modulus	Real		
K_IC_CAL	K <sub>1c</sub> as Calculated from CTOD <sub>1c</sub> (To be Det'd)	Real		(ksi √in)
DDATE	Test Date	Text	4	
REFE	Reference to Data Source	Text	50	
STANDARD	Test Standard	Text	15	
ST_DATE	Test Standard Year	Text	8	



**Table 11 - FATIGUE CRACK GROWTH HEADER**

VARIABLE NAME	DEFINITION	TYPE	SIZE	CODE VALUES
RECID	Record ID	Intgr		
SPEC_ID	Specimen ID	Text	15	
DTYP	Data Type	Text	2	03= a vs N 04= da/dN vs $\Delta K$ 05= a vs T 06= da/dT vs $\Delta K$
MATERIAL	Material Type	Text	2	01= Aluminum 02= Alloy Steel 03= Stainless Steel 04= Titanium 05= Nickel Based Super Alloys
ALLOY	Alloy	Text	25	
CONHT	Condition Heat	Text	85	
PROFRM	Product Form	Text	2	01= Sheet 02= Plate 03= Forging 04= Extrusion 05= Forged Bar 06= Billet 07= Casting 08= Round Bar 09= Welded & Stress Relieved 10= Weldment 11= Disk 12= Extruded Bar 13= Rolled Bar 14= Bar 15= Hand Forging 16= Pipe 17= Block 18= Nozzle 19= Ring 20= Shell 21= Nozzle Cutout 22= Nozzle Dropout 23= Nozzle Procurement Tests Ring 24= Weld Deposits Shell 25= Pipe, weld 26= Plate, weld 27= Plate, HAZ 28= Slab (Cast Flat) 29= Static Cast Pump Impeller 30= RPV Base Metal 31= HAZ
PROTHK	Product Thickness	Real		(Inches)



**Table 11 - FATIGUE CRACK GROWTH HEADER** (continued)

VARIABLE NAME	DEFINITION	TYPE	SIZE	CODE VALUES
PROWID	Product Width	Real		(Inches)
CMP	Composition	Text	125	<b>C= Carbon</b> <b>MN= Manganese</b> <b>P= Phosphorous</b> <b>S= Sulfur</b> <b>SI= Silicon</b> <b>NI= Nickel</b> <b>CR= Chromium</b> <b>MO= Molybdenum</b> <b>CU= Copper</b> <b>V= Vanadium</b> <b>TI= Titanium</b> <b>AL= Aluminum</b> <b>CO= Cobalt</b> <b>W= Tungsten</b> <b>AS= Arsenic</b> <b>SN= Tin</b> <b>ZR= Zirconium</b> <b>NB= Niobium</b> <b>SB= Antimony</b> <b>ZN= Zinc</b> <b>N= Nitrogen</b>
WDPRO	Weld Process	Text	2	<b>01= Shielded Metal Arc Weld (SMAW)</b> <b>02= Gas Tungsten Arc Weld (GTAW)</b> <b>03= Submerged Arc Weld (SAW)</b> <b>04= TSAW</b> <b>05= SMA</b> <b>06= GMAW</b> <b>07= FCA</b>
PRE_HT	Preheat Temperature	Real		(F)
PST_HT	Postheat Temperature	Real		(F)
INT_HT	Interpass Temperature	Real		(F)
VOLT	Voltage	Real		(volts)
AMP	Amperage	Real		(amps)
HT_INP	Heat Input	Real		(KJ/in)
TRAV_SD	Travel Speed	Real		(imp)



**Table 11 - FATIGUE CRACK GROWTH HEADER** (continued)

VARIABLE NAME	DEFINITION	TYPE	SIZE	CODE VALUES
JT_PREP	Joint Preparation	Text	2	01= V Groove 02= Single Bevel 03= Double Bevel 04= K Groove 05= Double V Groove
FIL_TYP	Filler Type/Name	Text	20	
FIL_SZ	Filler Size/Diam.	Real		(Inches)
TT_TEMP	Tensile Test Temperature	Real		(F)
TT_ORI	Tensile Test Orientation	Text	2	01= L-S 02= L-T 03= T-S 04= T-L 05= S-T 06= S-L 07= L-C 08= C-L 09= L-R 10= R-L 11= R-C 12= C-R 13= L-T45 14= CS 15= SC 16= RS 17= SR 21= AR 22= BA 23= RW 24= TR 25= WR 26= WCL 27= L 28= C
Y_STRENG	Yield Strength	Real		(ksi)
U_STRENG	Ultimate Strength	Real		(ksi)
PCT_ELON	Percent Elongation	Real		(%)
PCT_RA	Percent Reduction in Area	Real		(%)
TEMP	Fracture Toughness Test Temp	Real		(F)
ENVIR	Environment	Text	15	





**Table 11 - FATIGUE CRACK GROWTH HEADER** (continued)

VARIABLE NAME	DEFINITION	TYPE	SIZE	CODE VALUES
HUMID	Humidity	Text	1	1= Low Humidity (0-10%) 2= Moderate Humidity (10-80%) 3= High Humidity (80-100%) 4= Unknown 5= Not Applicable
HEAT_NBR	Heat Number	Text	17	
SPEC_DES	Specimen Design	Text	2	01= Compact Tension 02= Center Cracked Panel Max Load Specified 03= Center Cracked Panel Max Stress Specified 04= 4 Pt Bend 06= Wedge Open Loading CT Eqn 07= Modified WOL (BL-WOL or WOL-SQ) 08= Cantilever Beam 09= Double Cantilever Beam 10= Tapered Double Cantilever Beam 11= Charpy 12= Cantilever SG (Side Grooved for Plane Strain Condition) 13= Part Thru Surface Crack 14= Single Edge Notch Tension 15= Wedge Open Loading Old CT Eqn 16= KB Bar 17= 4 Pt Bend 18= Bend Specimen (SG) 19= Part Thru Surface Flaw Max Stress Specified 20= Modified Compact Tension 22= CDCB (Side Grooved) 23= Compact Specimen (Side Grooved) 25= CT-50 Compound Specimen with Cylindrical Coordinates 26= Double Cantilever Beam (Side Grooved) 27= Double Notch Bend



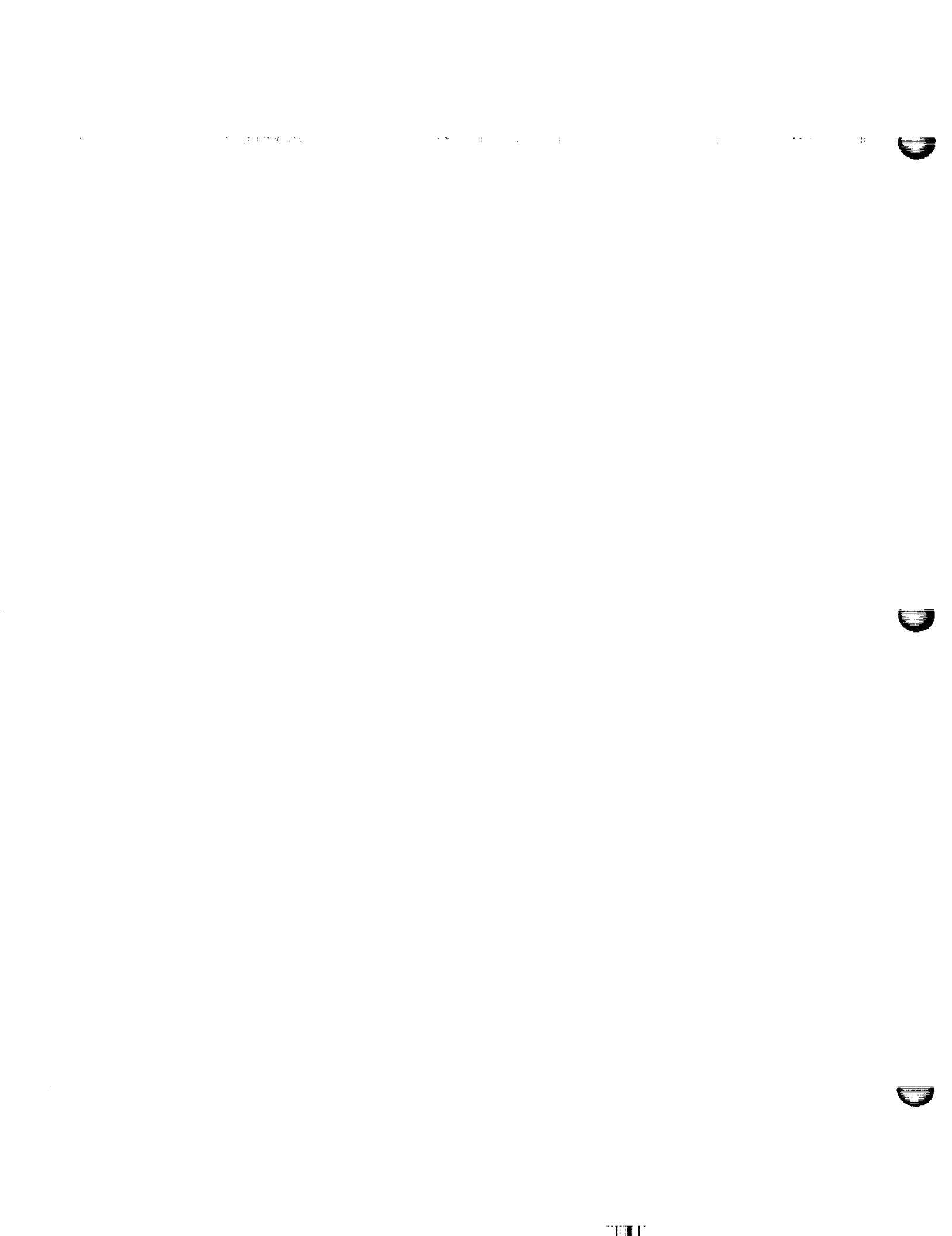
**Table 11 - FATIGUE CRACK GROWTH HEADER** (continued)

VARIABLE NAME	DEFINITION	TYPE	SIZE	CODE VALUES
SPEC_ORI	Specimen Orientation	Text	2	01= L-S 02= L-T 03= T-S 04= T-L 05= S-T 06= S-L 07= L-C 08= C-L 09= L-R 10= R-L 11= R-C 12= C-R 13= L-T45 14= CS 15= SC 16= RS 17= SR 21= AR 22= BA 23= RW 24= TR 25= WR 26= WCL 27= L 28= C
SPECTHK	Specimen Thickness	Real		(Inches)
SPECWD	Specimen Width	Real		(Inches)



**Table 11a - a vs N; TEST**  
Format Same As USAF Database

VARIABLE NAME	DEFINITION	TYPE	SIZE	CODE VALUES
<b>SPECGV</b>	<b>Total Side Groove Depth</b>	<b>Real</b>		<b>(Inches)</b>
STR_RATI	Stress Ratio	Real		
FREQL	Frequency-Low	Real		(Hertz)
FREQH	Frequency-Hi	Real		(Hertz)
WAVE	Wave Form	Text	2	00= Unknown 01= Sinusoidal 02= Triangular 03= Square 04= Fast/Slow Ramp 05= Slow/Fast Ramp 06= Trapezoidal 07= Sawtooth 08= Trapezoidal (1 minute hold time) 09= Trapezoidal (2 minute hold time) 10= Trapezoidal (5 minute hold time) 11= Trapezoidal (10 minute hold time) 12= Trapezoidal (15 minute hold time) 13= Trapezoidal (20 minute hold time) 14= Inverted Sine 15= Positive Sawtooth 16= Skewed Sawtooth 17= Ramp 18= Ramp/Reset
CRK_M_T	Crack Measurement Technique	Text	1	1= Visual 2= Compliance Method 3= AC - Electrical Potential 4= DC - Electrical Potential 5= Surface Gages 6= Unknown 7= Beach Marking Procedure 8= Ultrasonic
DDATE	Test Date	Text	4	
REFE	Reference to Data Source	Text	50	
STANDARD	Test Standard	Text	15	
ST_DATE	Test Standard Year	Text	8	



**Table 11b - a vs N; DAT**  
Same Format As USAF Database

VARIABLE NAME	DEFINITION	TYPE	SIZE	CODE VALUES
DATCODE	Data Type	Text	1	P= Precracking T= Test
PMAX	Max Load	Real		(kips)
CYCLES	Cycles	Real		
CRKF1	Crack Length Front Face 1	Real		(Inches)
CRKF2	Crack Length Front Face 2	Real		(Inches)
CRKB1	Crack Length Back Face 1	Real		(Inches)
CRKB2	Crack Length Back Face 2	Real		(Inches)
EvB/P	Normalized Compliance	Real		
CCL	Crack Closure Load	Real		(% Max Load)





**Table 11c - da/dN vs  $\Delta K$ ; TEST**  
Format Same As USAF Database

VARIABLE NAME	DEFINITION	TYPE	SIZE	CODE VALUES
SPECGV	Total Side Groove Depth	Real		(Inches)
STR_RATI	Stress Ratio	Real		
FREQL	Frequency-Low	Real		(Hertz)
FREQH	Frequency-Hi	Real		(Hertz)
WAVE	Wave Form	Text	2	00= Unknown 01= Sinusoidal 02= Triangular 03= Square 04= Fast/Slow Ramp 05= Slow/Fast Ramp 06= Trapezoidal 07= Sawtooth 08= Trapezoidal (1 minute hold time) 09= Trapezoidal (2 minute hold time) 10= Trapezoidal (5 minute hold time) 11= Trapezoidal (10 minute hold time) 12= Trapezoidal (15 minute hold time) 13= Trapezoidal (20 minute hold time) 14= Inverted Sine 15= Positive Sawtooth 16= Skewed Sawtooth 17= Ramp 18= Ramp/Reset
RE_METHD	Reduction Method	Text	1	1= Unknown 2= Secant 3= 5 pt Polynomial 4= 7 pt Polynomial 5= Combination of Above 6= Manual/Tangent Method
DAT_SCR	Data Source	Text	1	1= From A vs N Data 2= From da/dN Data 3= From Digitization of plots
STR_INT	Stress Intensity Format	Text	1	1= Delta K 2= Kmax
DDATE	Test Date	Text	4	
REFE	Reference to Data Source	Text	50	

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111. 1. 1

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111. 1. 1



**Table 11c - da/dN vs  $\Delta K$ ; TEST** (continued)

VARIABLE NAME	DEFINITION	TYPE	SIZE	CODE VALUES
ERR_CRT	Error Criteria	Text	11	For all ASTM Standard Codes: 0-9= Number of times test failed this criteria * = Number of times test failed this criteria is > 9 X = Criteria not applicable to this test N = Data received in da/dN format
STANDARD	Test Standard	Text	15	
ST_DATE	Test Standard Year	Text	8	

**Table 11d - da/dN vs  $\Delta K$ ; DAT**  
Same Format as USAF Database

VARIABLE NAME	DEFINITION	TYPE	SIZE	CODE VALUES
DATCODE	Data Type	Text	1	P= Precracking T= Test
PMAX	Max Load	Real		(kips)
DA_DN	da/dN	Double		(Inches/Cycle)
DELTAK	Delta K	Real		(ksi $\sqrt{\text{in}}$ )



**Table 12 - R CURVE HEADER**

VARIABLE NAME	DEFINITION	TYPE	SIZE	CODE VALUES
RECID	Record ID	Intgr		
SPEC_ID	Specimen ID	Text	15	
DTYP	Data Type	Text	2	08= R-curve (K) 11= R-curve (J)
MATERIAL	Material Type	Text	2	01= Aluminum 02= Alloy Steel 03= Stainless Steel 04= Titanium 05= Nickel Based Super Alloys
ALLOY	Alloy	Text	25	
CONHT	Condition Heat	Text	85	
PROFRM	Product Form	Text	2	01= Sheet 02= Plate 03= Forging 04= Extrusion 05= Forged Bar 06= Billet 07= Casting 08= Round Bar 09= Welded & Stress Relieved 10= Weldment 11= Disk 12= Extruded Bar 13= Rolled Bar 14= Bar 15= Hand Forging 16= Pipe 17= Block 18= Nozzle 19= Ring 20= Shell 21= Nozzle Cutout 22= Nozzle Dropout 23= Nozzle Procurement Tests Ring 24= Weld Deposits Shell 25= Pipe, weld 26= Plate, weld 27= Plate, HAZ 28= Slab (Cast Flat) 29= Static Cast Pump Impeller 30= RPV Base Metal 31= HAZ
PROTHK	Product Thickness	Real		(Inches)
PROWID	Product Width	Real		(Inches)



**Table 12 - R CURVE HEADER** (continued)

VARIABLE NAME	DEFINITION	TYPE	SIZE	CODE VALUES
<b>CMP</b>	<b>Composition</b>	<b>Text</b>	<b>125</b>	<b>C= Carbon</b> <b>MN= Manganese</b> <b>P= Phosphorous</b> <b>S= Sulfur</b> <b>SI= Silicon</b> <b>NI= Nickel</b> <b>CR= Chromium</b> <b>MO= Molybdenum</b> <b>CU= Copper</b> <b>V= Vanadium</b> <b>TI= Titanium</b> <b>AL= Aluminum</b> <b>CO= Cobalt</b> <b>W= Tungsten</b> <b>AS= Arsenic</b> <b>SN= Tin</b> <b>ZR= Zirconium</b> <b>NB= Niobium</b> <b>SB= Antimony</b> <b>ZN= Zinc</b> <b>N= Nitrogen</b>
<b>WDPRO</b>	<b>Weld Process</b>	<b>Text</b>	<b>2</b>	<b>01= Shielded Metal Arc Weld (SMAW)</b> <b>02= Gas Tungsten Arc Weld (GTAW)</b> <b>03= Submerged Arc Weld (SAW)</b> <b>04= TSAW</b> <b>05= SMA</b> <b>06= GMAW</b> <b>07= FCA</b>
<b>PRE_HT</b>	<b>Preheat Temperature</b>	<b>Real</b>		<b>(F)</b>
<b>PST_HT</b>	<b>Postheat Temperature</b>	<b>Real</b>		<b>(F)</b>
<b>INT_HT</b>	<b>Interpass Temperature</b>	<b>Real</b>		<b>(F)</b>
<b>VOLT</b>	<b>Voltage</b>	<b>Real</b>		<b>(volts)</b>
<b>AMP</b>	<b>Amperage</b>	<b>Real</b>		<b>(amps)</b>
<b>HT_INP</b>	<b>Heat Input</b>	<b>Real</b>		<b>(KJ/in)</b>
<b>TRAV_SD</b>	<b>Travel Speed</b>	<b>Real</b>		<b>(imp)</b>
<b>JT_PREP</b>	<b>Joint Preparation</b>	<b>Text</b>	<b>2</b>	<b>01= V Groove</b> <b>02= Single Bevel</b> <b>03= Double Bevel</b> <b>04= K Groove</b> <b>05= Double V Groove</b>





**Table 12 - R CURVE HEADER** (continued)

VARIABLE NAME	DEFINITION	TYPE	SIZE	CODE VALUES
FIL_TYP	Filler Type/Name	Text	20	
FIL_SZ	Filler Size/Diam.	Real		(Inches)
TT_TEMP	Tensile Test Temperature	Real		(F)
TT_OR	Tensile Test Orientation	Text	2	01= L-S 02= L-T 03= T-S 04= T-L 05= S-T 06= S-L 07= L-C 08= C-L 09= L-R 10= R-L 11= R-C 12= C-R 13= L-T45 14= CS 15= SC 16= RS 17= SR 21= AR 22= BA 23= RW 24= TR 25= WR 26= WCL 27= L 28= C
Y_STRENG	Yield Strength	Real		(ksi)
U_STRENG	Ultimate Strength	Real		(ksi)
PCT_ELON	Percent Elongation	Real		(%)
PCT_RA	Percent Reduction in Area	Real		(%)
TEMP	Fracture Toughness Test Temp	Real		(F)
ENVIR	Environment	Text	15	
HEAT_NBR	Heat Number	Text	17	



**Table 12 - R CURVE HEADER** (continued)

VARIABLE NAME	DEFINITION	TYPE	SIZE	CODE VALUES
SPEC_DES	Specimen Design	Text	2	01= Compact Tension 02= Center Cracked Panel Max Load Specified 03= Center Cracked Panel Max Stress Specified 04= 4 Pt Bend 06= Wedge Open Loading CT Eqn 07= Modified WOL (BL-WOL or WOL-SQ) 08= Cantilever Beam 09= Double Cantilever Beam 10= Tapered Double Cantilever Beam 11= Charpy 12= Cantilever SG (Side Grooved for Plane Strain Condition) 13= Part Thru Surface Crack 14= Single Edge Notch Tension 15= Wedge Open Loading Old CT Eqn 16= KB Bar 17= 4 Pt Bend 18= Bend Specimen (SG) 19= Part Thru Surface Flaw Max Stress Specified 20= Modified Compact Tension 22= CDCB (Side Grooved) 23= Compact Specimen (Side Grooved) 25= CT-50 Compound Specimen with Cylindrical Coordinates 26= Double Cantilever Beam (Side Grooved) 27= Double Notch Bend



**Table 12 - R CURVE HEADER** (continued)

VARIABLE NAME	DEFINITION	TYPE	SIZE	CODE VALUES
SPEC_ORT	Specimen Orientation	Text	2	01= L-S 02= L-T 03= T-S 04= T-L 05= S-T 06= S-L 07= L-C 08= C-L 09= L-R 10= R-L 11= R-C 12= C-R 13= L-T45 14= CS 15= SC 16= RS 17= SR 21= AR 22= BA 23= RW 24= TR 25= WR 26= WCL 27= L 28= C
SPECTHK	Specimen Thickness	Real		(Inches)
SPECWD	Specimen Width	Real		(Inches)



**Table 12a - K<sub>R</sub>: TEST**  
Same Format As USAF Database

VARIABLE NAME	DEFINITION	TYPE	SIZE	CODE VALUES
CR_M_ACC	Crack Measurement Accuracy	Real		
OB_FRAC	% Oblique Fracture	Real		
KC	Maximum Value of K <sub>R</sub>	Real		
RESTRNT	Restraint	Text	2	01= Restrained 02= Not Restrained
CRK_M_T	Crack Measurement Technique	Text	1	1= Visual 2= Compliance Method 3= AC - Electrical Potential 4= DC - Electrical Potential 5= Surface Gages 6= Unknown 7= <b>Beach Marking Procedure</b> 8= <b>Ultrasonic</b>
MTD_P_Z	Method of Plastic Zone Size Adjustment	Text	1	1= None 2=0.5*PI*(ABS(K(I)/TYS))**2
DDATE	Test Date	Text	4	
REFE	Reference to Data Source	Text	50	
STANDARD	Test Standard	Text	15	
ST_DATE	Test Standard Year	Text	8	





**Table 12b - K<sub>R</sub>: DAT**  
Same Format As USAF Database

VARIABLE NAME	DEFINITION	TYPE	SIZE	CODE VALUES
MAXL	Maximum Load	Real		(kips)
MCLF1	Measured Crack Length-Front 1	Real		(Inches)
MCLB1	Measured Crack Length-Back 1	Real		(Inches)
MCLF2	Measured Crack Length-Front 2	Real		(Inches)
MCLB2	Measured Crack Length-Back 2	Real		(Inches)
PZSF3	Plastic Zone Size Adjustment-Front	Real		(Inches)
PZSB3	Plastic Zone Size Adjustment-Back	Real		(Inches)
ECLF4	Effective Crack Length-Front	Real		(Inches)
ECLB4	Effective Crack Length-Back	Real		(Inches)
SIFF5	Effective Stress Intensity Factor Front	Real		(Inches)
SIFB5	Effective Stress Intensity Factor Back	Real		(Inches)
DLT_C_L	Delta Effective Crack Length	Real		(Inches)
AMCF6	Average Measured Crack Length-Front	Real		(Inches)
AMCB6	Average Measured Crack Length-Back	Real		(Inches)



**Table 12c - J<sub>R</sub>: TEST**  
NEW DATA FIELD TYPE

VARIABLE NAME	DEFINITION	TYPE	SIZE	CODE VALUES
SPECGV	Total Side Groove Depth	Real		(Inches)
CR_M_ACC	Crack Measurement Accuracy	Real		
JMAX	Maximum Value of J <sub>R</sub>	Real		
RESTRNT	Restraint	Text	2	01= Restrained 02= Not Restrained
CRK_M_T	Crack Measurement Technique	Text	1	1= Visual 2= Elastic Compliance Method 3= AC - Electrical Potential 4= DC - Electrical Potential 5= Surface Gages 6= Unknown 7= Beach Marking Procedure 8= Ultrasonic
DDATE	Test Date	Text	4	
REFE	Reference to Data Source	Text	50	
STANDARD	Test Standard	Text	15	
ST_DATE	Test Standard Year	Text	8	

**Table 12d - J<sub>R</sub>: DAT**  
NEW DATA FIELD TYPE

VARIABLE NAME	DEFINITION	TYPE	SIZE	CODE VALUES
APPL_L	Applied Load	Real		(kips)
UDEFL	As-Measured Specimen Displacement	Real		(Inches)
CDEFL	Corrected Specimen Displacement	Real		(Inches)
JR	Calculated Value of J <sub>R</sub>	Real		(in-lb/in <sup>2</sup> )
DELA_ACT	Actual Delta a	Real		(Inches)
DELA_EFF	Effective Delta a	Real		(Inches)



# Section 5

## ***Summary***

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The NASA Johnson database created and described herein represents a extensive collection of damage tolerant data for non-aerospace structural materials. The fracture toughness data which has been collected will also prove useful as a source of data for the code NASA/FLAGRO.



**Appendix A**  
**Graphical Presentation of FCG Rate and R-Curve Data for Stainless Steel**





F 304

Condition/Ht: ANNEALED

Form: Sheet

Specimen Type: CCP (max load specified)

Orientation:

Stress Ratio: 0.05

Environment: LAB AIR; RT

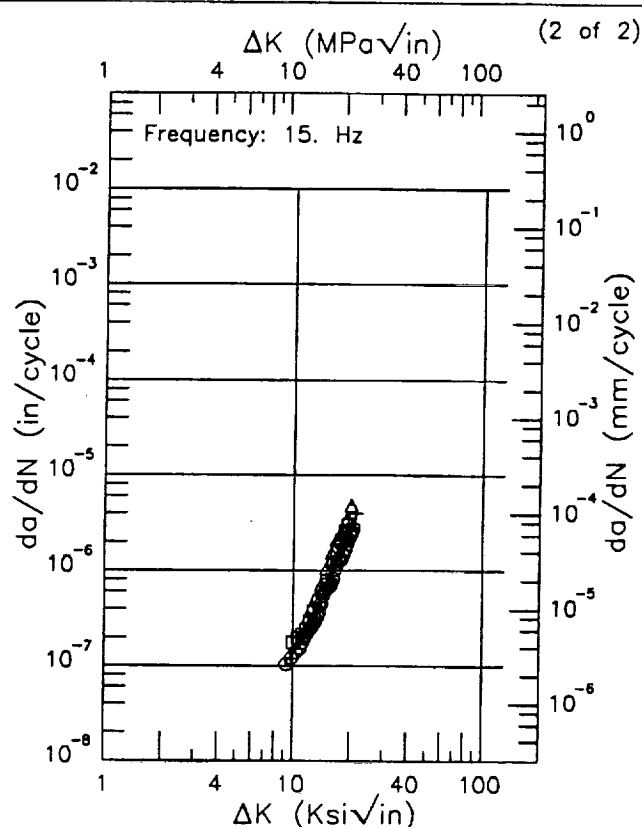
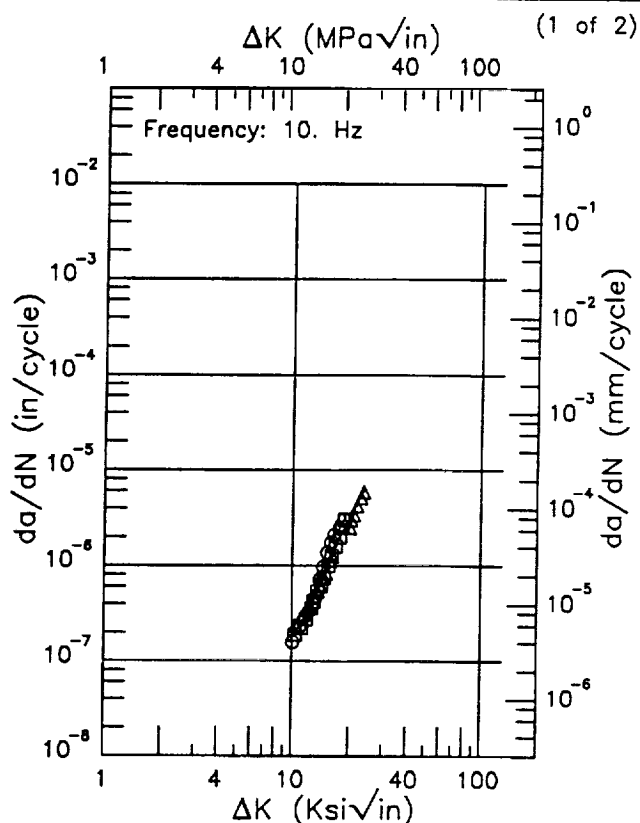
Yield Strength:

Ult. Strength:

Specimen Thk: 0.018 in.

Specimen Width: 0.995 - 1.998 in.

Ref: EPWHS



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
10.02 (min)	0.176
13.	0.428
16.	1.37
20.	3.04
23.50 (max)	6.23

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
9.16 (min)	0.111
10.	0.134
13.	0.351
16.	0.958
20.	2.89
21.28 (max)	3.84

RMS %  
Error  
14.64

Life Prediction Ratio Summary

0. .5 .8 1.25 2.  $\square\square\Delta$

RMS %  
Error  
25.33

Life Prediction Ratio Summary

0. .5 .8 1.25 2.  $\square\square\Delta$

Condition/Ht: ANNEALED

Form: Sheet

Specimen Type: CCP (max load specified)

Orientation:

Stress Ratio: 0.1

Environment: LAB AIR; RT

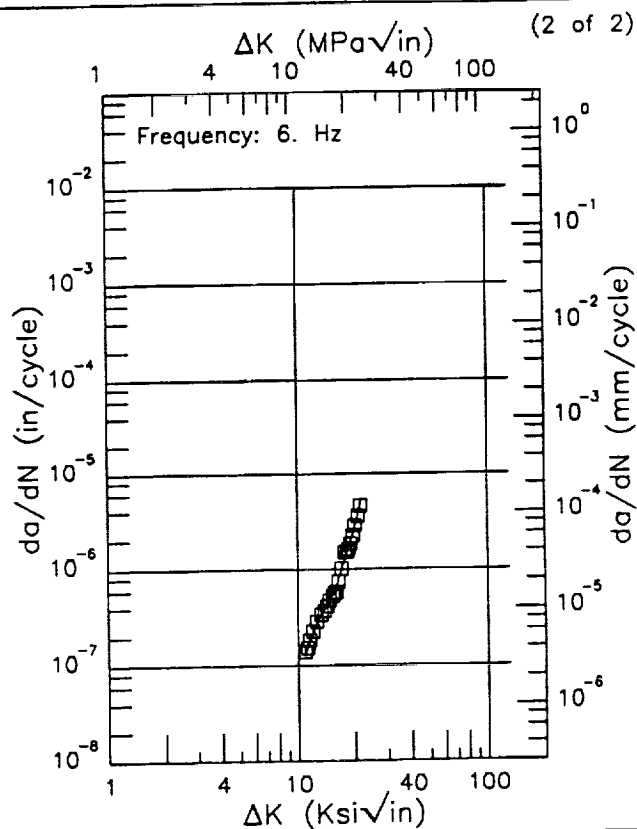
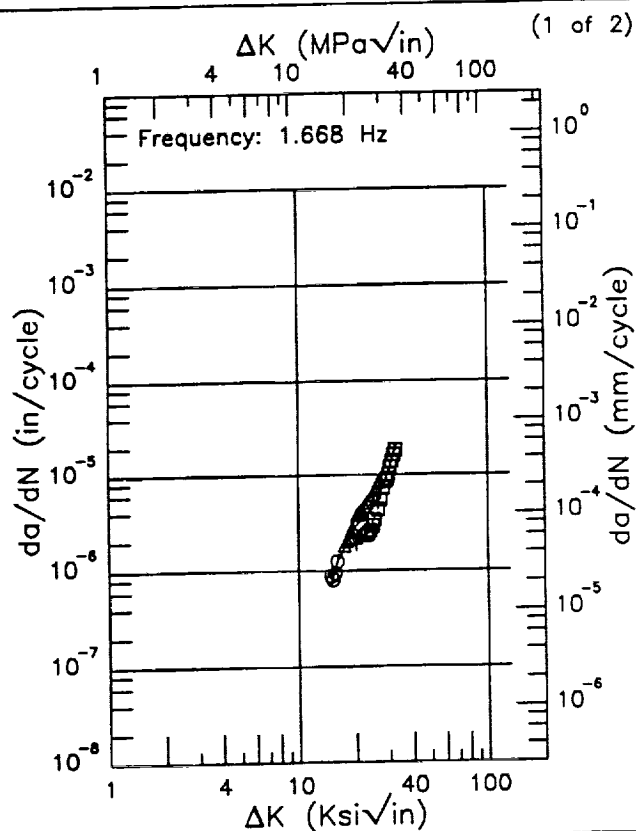
Yield Strength:

Ult. Strength:

Specimen Thk: 0.01 in.

Specimen Width: 2 in.

Ref: EPWHS

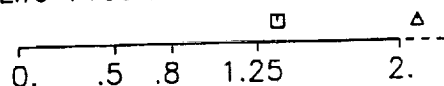


$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
14.71 (min)	0.700
16.	1.25
20.	2.82
25.	4.65
30.	10.6
32.53 (max)	19.9

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
10.86 (min)	0.130
13.	0.315
16.	0.653
20.	2.60
21.50 (max)	4.71

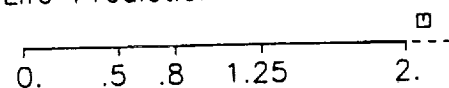
RMS %  
Error  
24.35

Life Prediction Ratio Summary



RMS %  
Error  
6.63

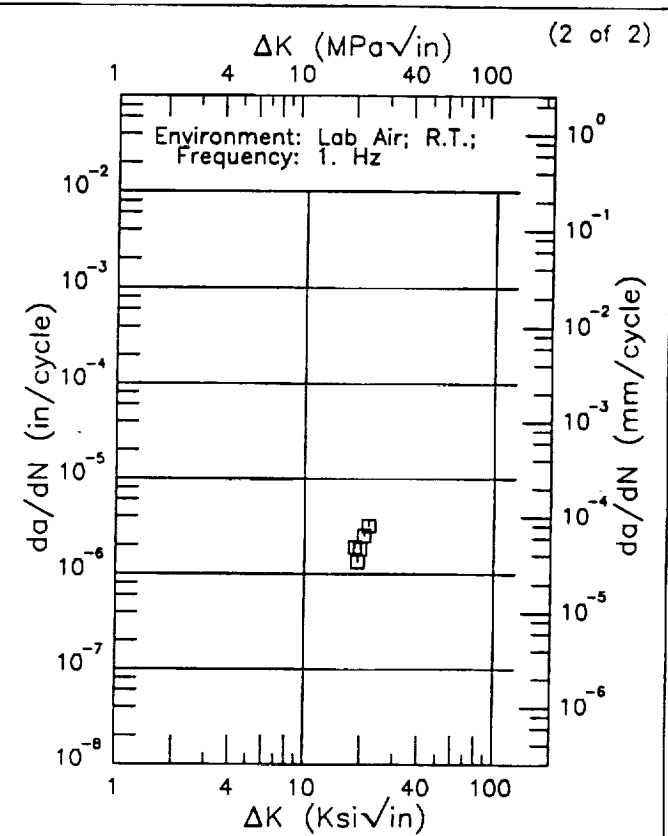
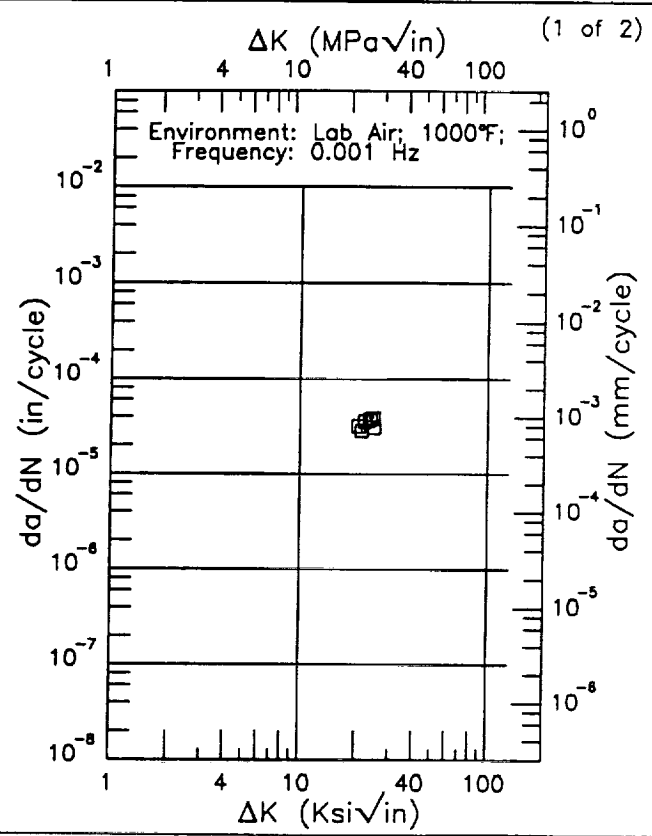
Life Prediction Ratio Summary



EF 304

Condition/Ht: ANNEALED  
 Form: Plate  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.05

Yield Strength: 39.6 ksi  
 Ult. Strength: 77.1 ksi  
 Specimen Thk: 0.494 - 0.5 in.  
 Specimen Width: 2 - 2.001 in.  
 Ref: EPADD

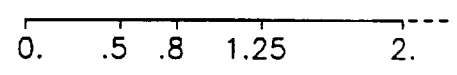


$\Delta K$  (Ksi√in)       $da/dN$  ( $10^{-6}$  in/cycle)

$\Delta K$  (Ksi√in)       $da/dN$  ( $10^{-6}$  in/cycle)

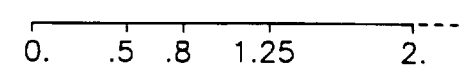
RMS %  
 Error

Life Prediction Ratio Summary



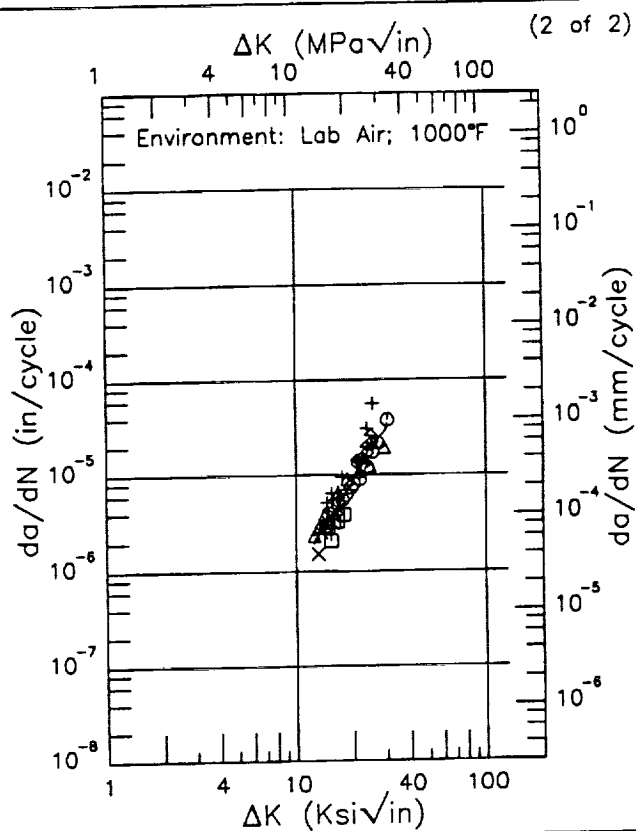
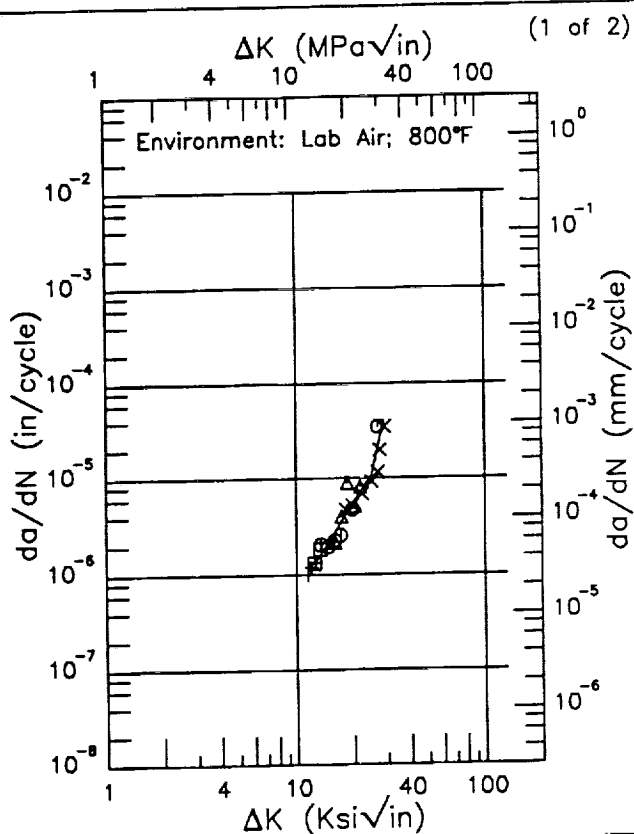
RMS %  
 Error

Life Prediction Ratio Summary



Condition/Ht: ANNEALED  
 Form: Plate  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.05  
 Frequency: 0.7 Hz

Yield Strength: 39.6 ksi  
 Ult. Strength: 77. ksi  
 Specimen Thk: 0.296 - 0.3 in.  
 Specimen Width: 1.153 - 1.155 in.  
 Ref: EPADD;EPWHS



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
11.47 (min)	1.19
13.	1.46
16.	2.80
20.	5.73
25.	10.8
29.09 (max)	40.2

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
12.40 (min)	1.94
13.	2.26
16.	4.10
20.	8.84
25.	20.3
30.	30.3
30.31 (max)	35.1

RMS %  
 Error  
 30.46

Life Prediction Ratio Summary  

 0. .5 .8 1.25 2.

RMS %  
 Error  
 39.89

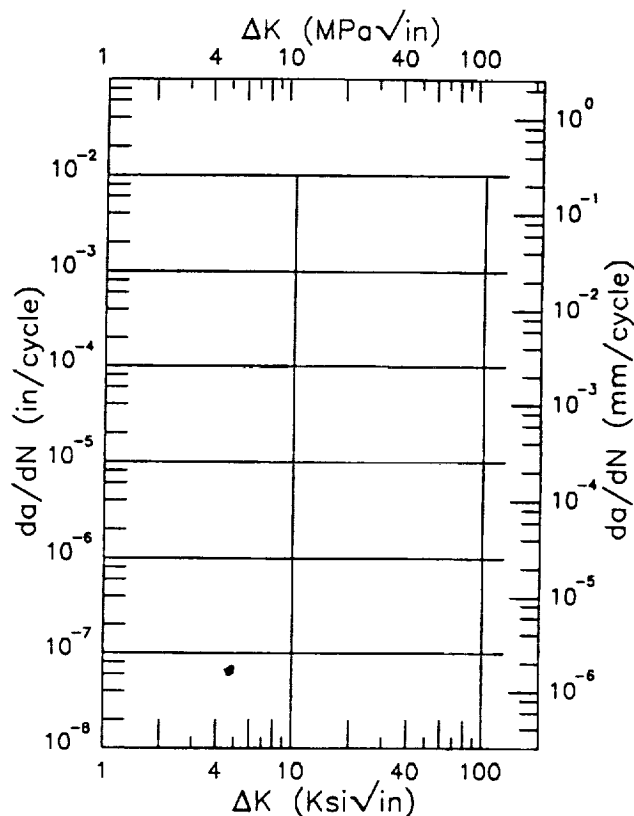
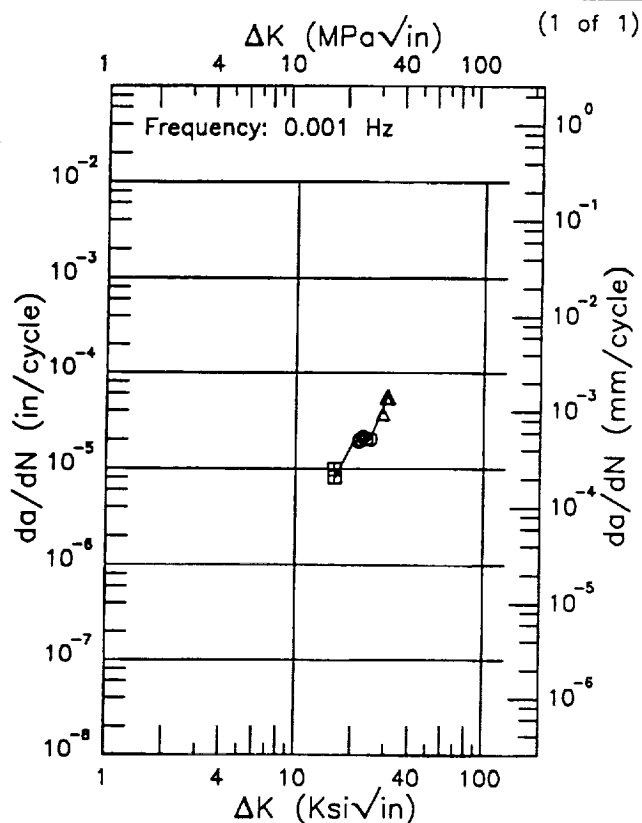
Life Prediction Ratio Summary  

 0. .5 .8 1.25 2.

F 304

Condition/Ht: ANNEALED  
 Form: Plate  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.05  
 Environment: LAB AIR;1000°F

Yield Strength: 39.6 ksi  
 Ult. Strength: 77.1 ksi  
 Specimen Thk: 0.361 in.  
 Specimen Width: 2.997 in.  
 Ref: EPADD



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
15.93 (min)	7.49
16.	7.76
20.	18.5
25.	21.6
30.	52.8
30.76 (max)	67.2

$\Delta K$  (Ksi $\sqrt{\text{in}}$ )       $da/dN$  ( $10^{-6}$  in/cycle)

RMS %  
 Error  
 12.14

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

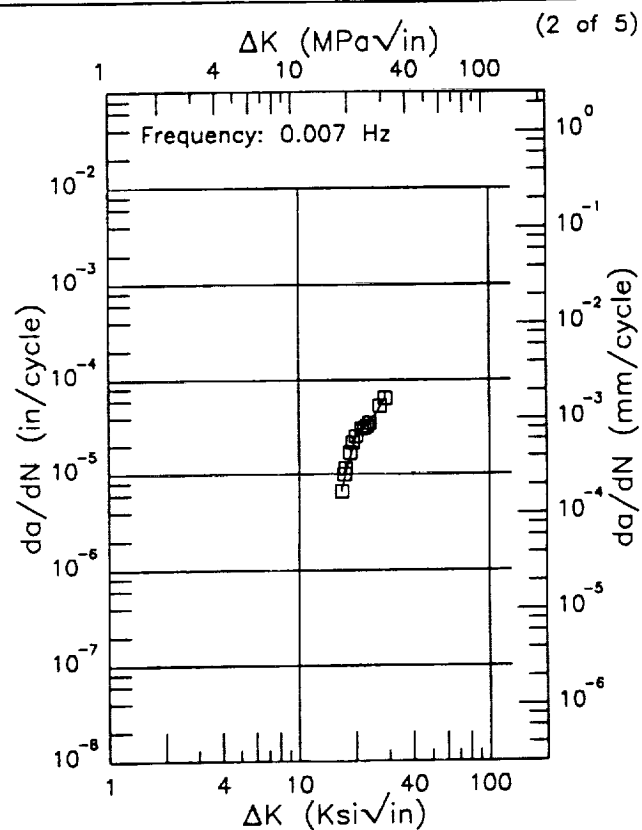
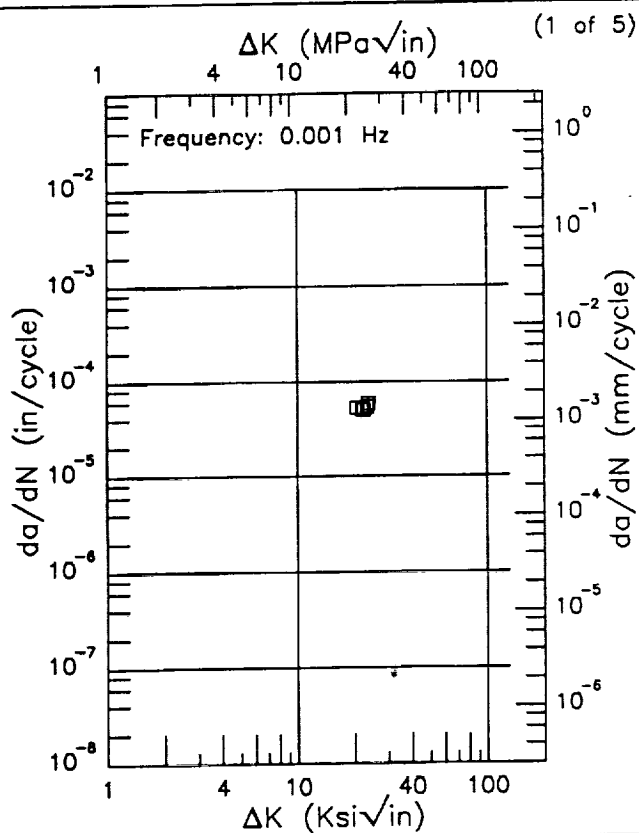
RMS %  
 Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

Condition/Ht: ANNEALED  
 Form: Plate  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.05  
 Environment: LAB AIR; 1000°F

Yield Strength: 37. - 39.6 ksi  
 Ult. Strength: 77. - 81.9 ksi  
 Specimen Thk: 0.491 - 0.511 in.  
 Specimen Width: 1.999 - 2.004 in.  
 Ref: EPWHS



$\Delta K$  (Ksi $\sqrt{\text{in}}$ )      da/dN ( $10^{-6}$  in/cycle)

$\Delta K$  (Ksi $\sqrt{\text{in}}$ )      da/dN ( $10^{-6}$  in/cycle)

16.77 (min)	6.85
20.	25.4
25.	41.1
28.32 (max)	63.0

RMS %  
Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

RMS %  
Error

10.49

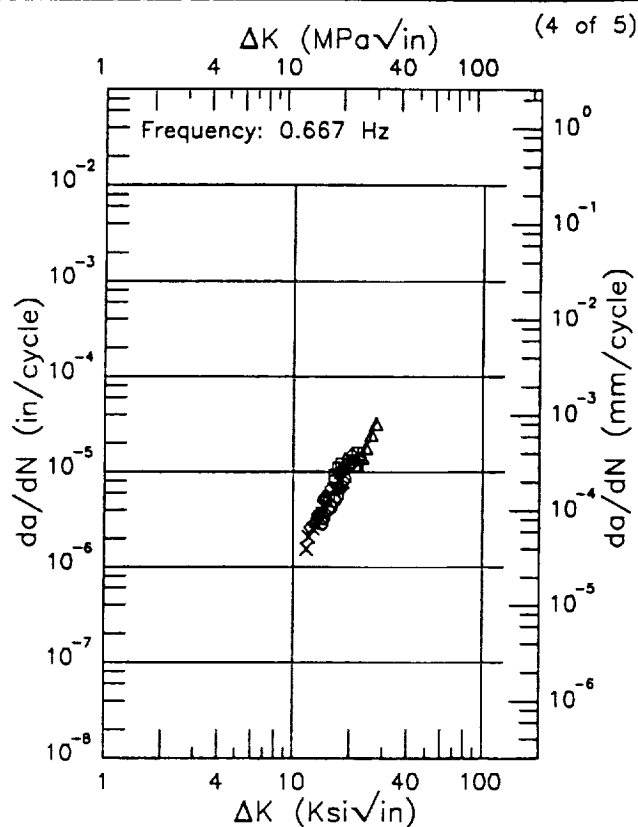
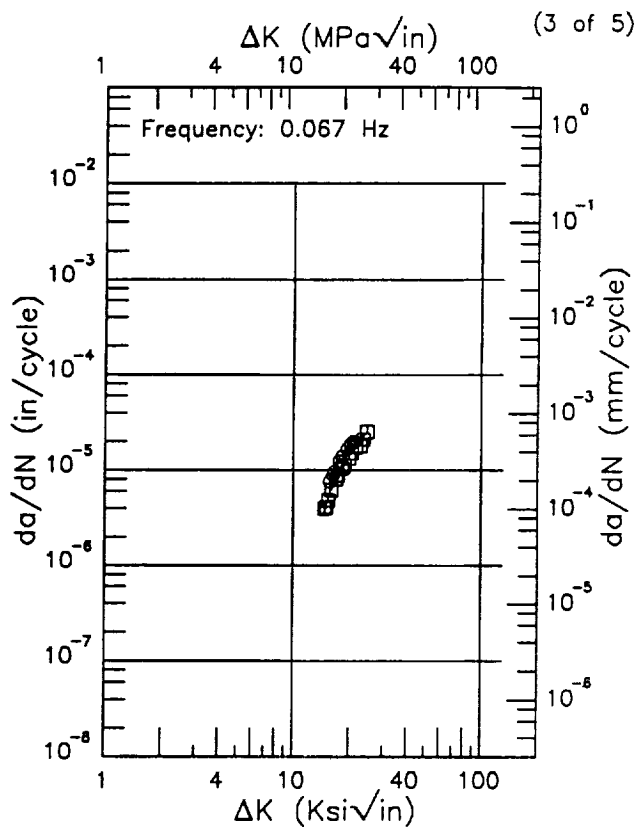
Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

F | 304 |

Condition/Ht: ANNEALED  
 Form: Plate  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.05  
 Environment: LAB AIR;1000°F

Yield Strength: 37. - 39.6 ksi  
 Ult. Strength: 77. - 81.9 ksi  
 Specimen Thk: 0.491 - 0.511 in.  
 Specimen Width: 1.999 - 2.004 in.  
 Ref: EPWHS



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
14.55 (min)	3.44
16.	7.29
20.	16.0
24.61 (max)	25.2

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
11.71 (min)	1.89
13.	2.74
16.	6.04
20.	11.4
25.	19.6
27.27 (max)	33.8

RMS %  
 Error  
 13.91

Life Prediction Ratio Summary

□ ○

0. .5 .8 1.25 2.

RMS %  
 Error  
 17.39

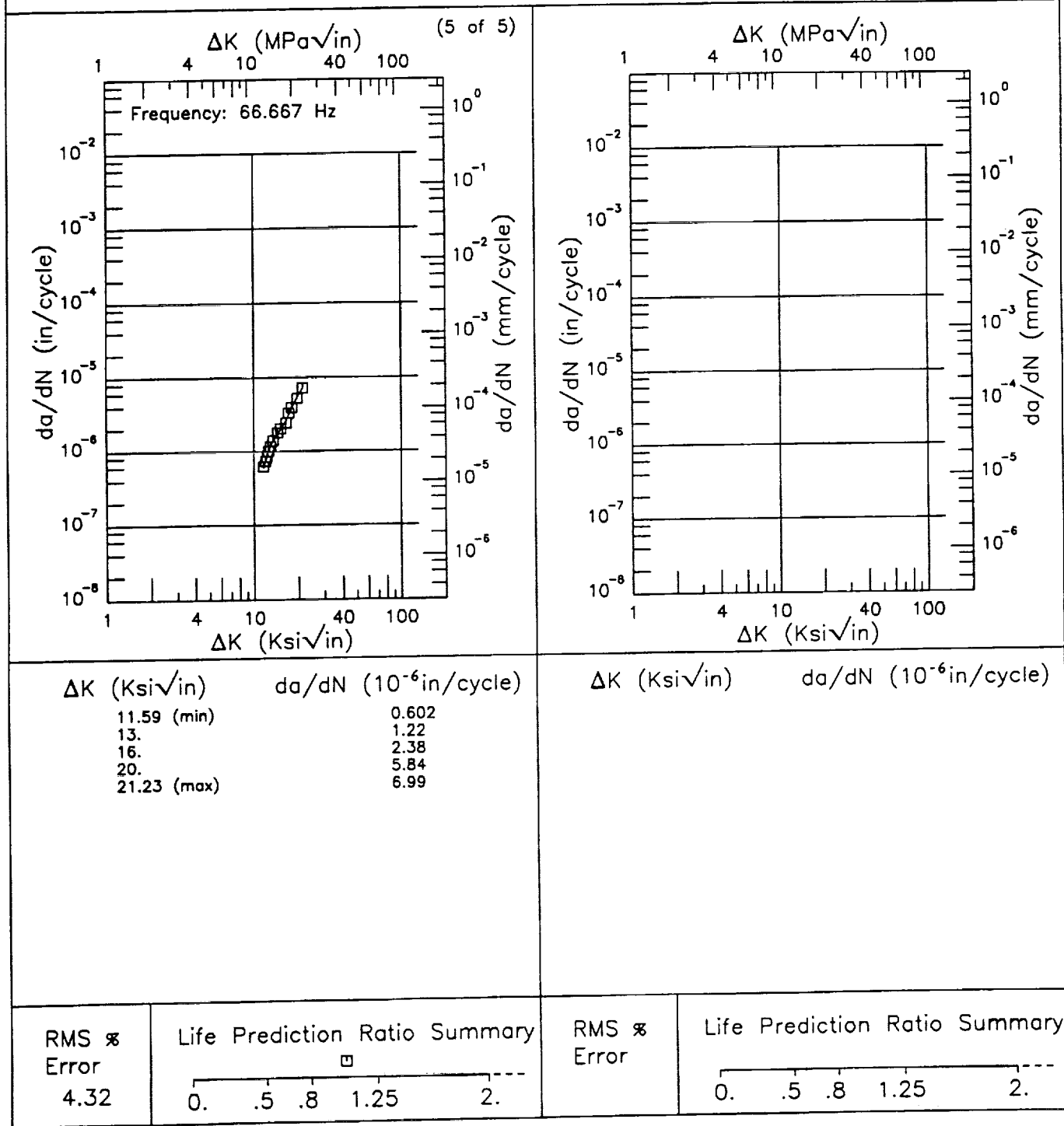
Life Prediction Ratio Summary

⊕ ✕ ⊙ □

0. .5 .8 1.25 2.

Condition/Ht: ANNEALED  
 Form: Plate  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.05  
 Environment: LAB AIR;1000°F

Yield Strength: 37. - 39.6 ksi  
 Ult. Strength: 77. - 81.9 ksi  
 Specimen Thk: 0.491 - 0.511 in.  
 Specimen Width: 1.999 - 2.004 in.  
 Ref: EPWHS





F 304

Condition/Ht: ANNEALED

Form: Plate

Specimen Type: CT

Orientation:

Stress Ratio: 0.05

Environment: LAB AIR; 1200°F

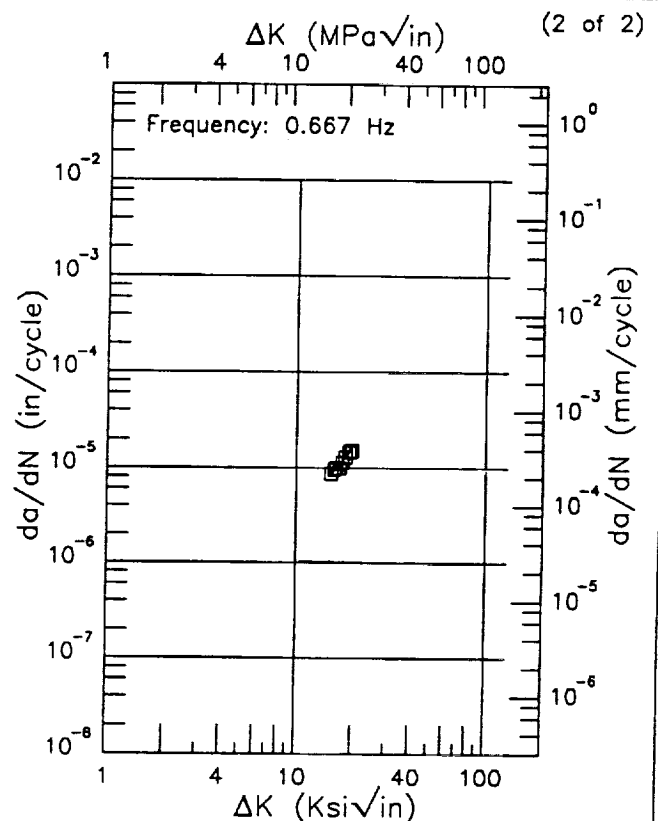
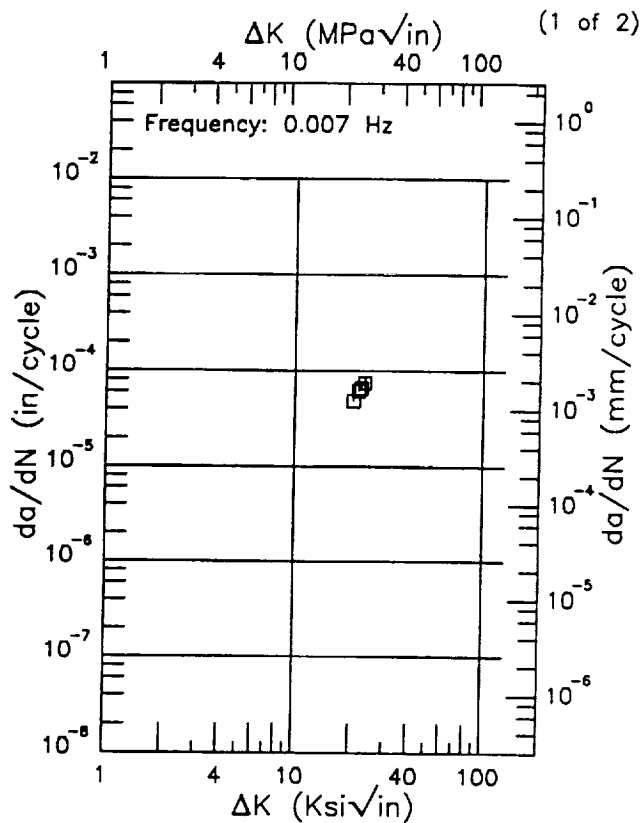
Yield Strength: 39.6 ksi

Ult. Strength: 77.1 ksi

Specimen Thk: 0.497 - 0.498 in.

Specimen Width: 2.002 in.

Ref: EPWHS



$\Delta K$  (Ksi√in)       $da/dN$  ( $10^{-6}$  in/cycle)

$\Delta K$  (Ksi√in)       $da/dN$  ( $10^{-6}$  in/cycle)

15.21 (min)

8.92

16.

9.34

19.56 (max)

15.6

RMS %  
Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.---

RMS %  
Error

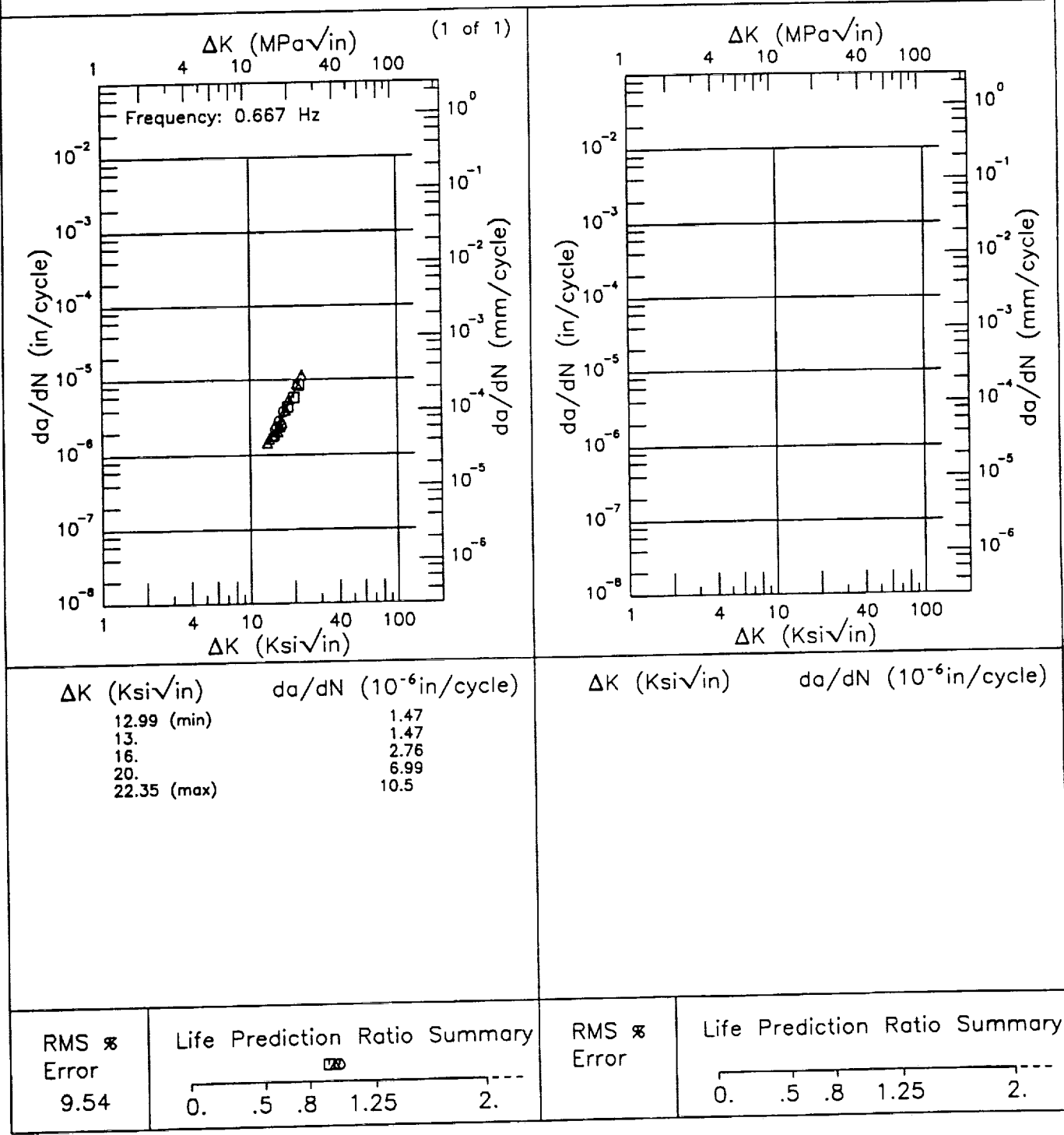
4.17

Life Prediction Ratio Summary

0. .5 .8 1.25 2.---

Condition/Ht: ANNEALED  
 Form: Plate  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.05  
 Environment: LAB AIR;801°F

Yield Strength: 39.6 ksi  
 Ult. Strength: 77.1 ksi  
 Specimen Thk: 0.497 - 0.5 in.  
 Specimen Width: 1.999 - 2.007 in.  
 Ref: EPWHS



F

304

Condition/Ht: ANNEALED

Form: Plate

Specimen Type: CT

Orientation:

Stress Ratio: 0.05

Environment: LAB AIR;1000°F

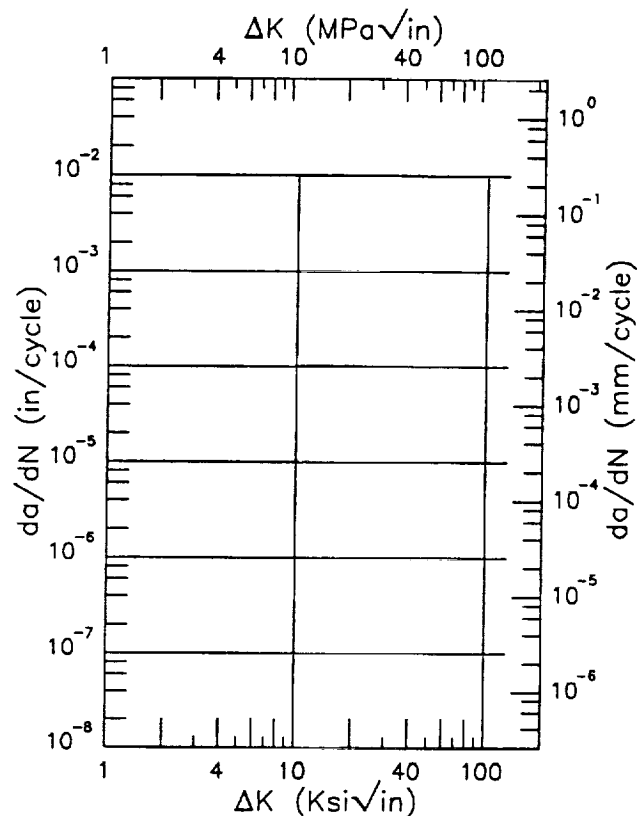
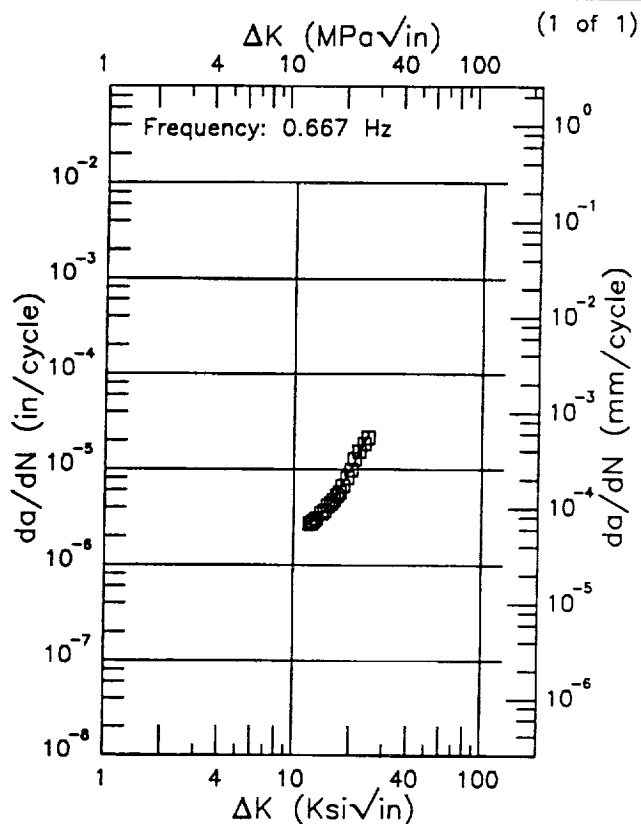
Yield Strength: 36.3 ksi

Ult. Strength: 80.8 ksi

Specimen Thk: 0.444 in.

Specimen Width: 2.001 in.

Ref: EPWHS



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
12.06 (min)	2.77
13.	2.96
16.	4.63
20.	10.00
24.54 (max)	22.2

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
--------------------------------------	-----------------------------------

RMS %  
Error  
4.29

Life Prediction Ratio Summary

0. .5 .8 1.25 2.---

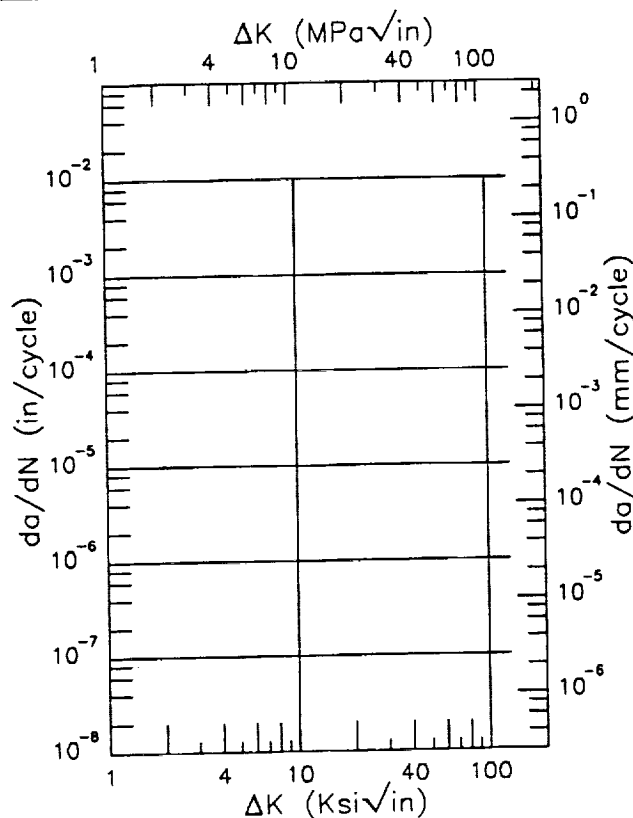
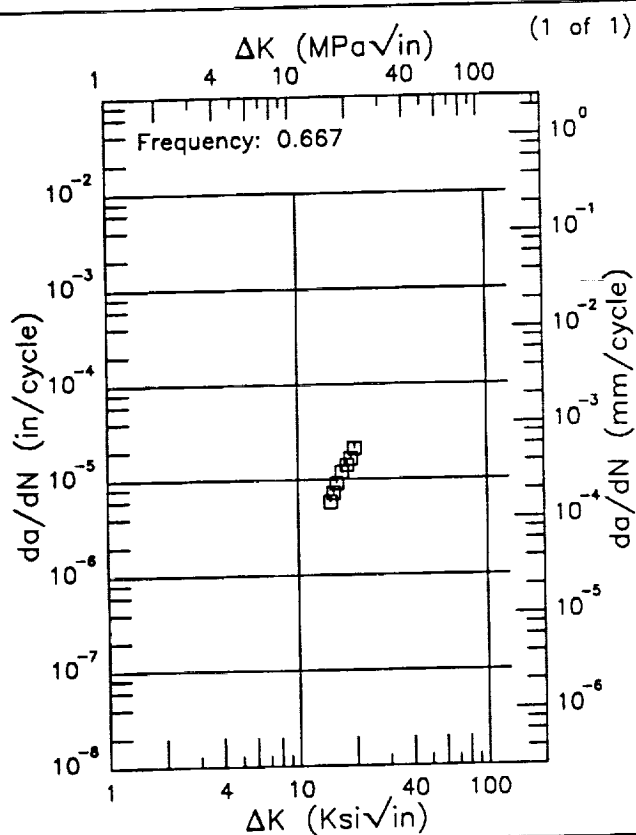
RMS %  
Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.---

Condition/Ht: ANNEALED  
 Form: Plate  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.05  
 Environment: LAB AIR;1000°F

Yield Strength: 39.3 ksi  
 Ult. Strength: 77. ksi  
 Specimen Thk: 0.517 in.  
 Specimen Width: 1.497 in.  
 Ref: EPWHS



$\Delta K$  (Ksi $\sqrt{\text{in}}$ )

$da/dN$  ( $10^{-6}$  in/cycle)

$\Delta K$  (Ksi $\sqrt{\text{in}}$ )

$da/dN$  ( $10^{-6}$  in/cycle)

RMS %  
Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

RMS %  
Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

R

304

Condition/Ht: ANNEALED

Form: Plate

Specimen Type: CCP (max load specified)

Orientation:

Frequency: 0.2 Hz

Environment: LAB AIR; RT

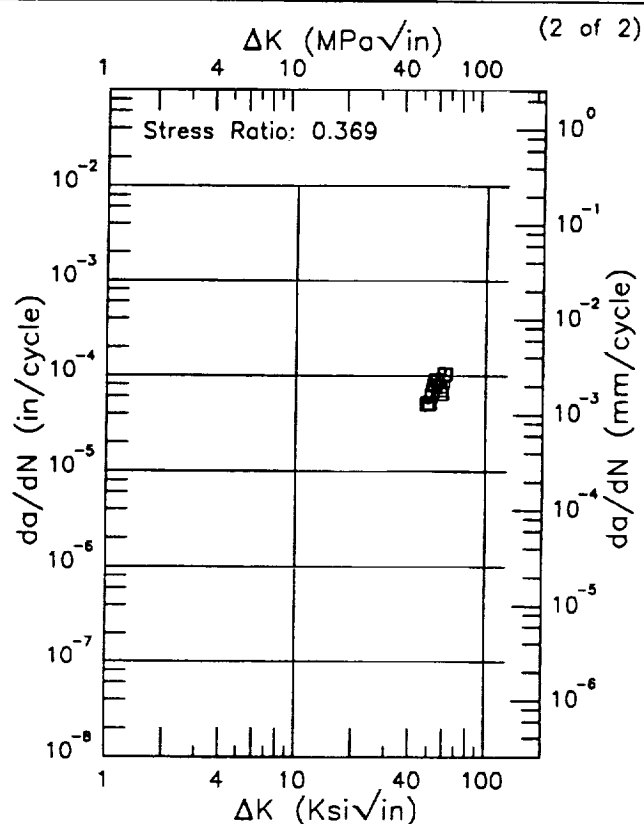
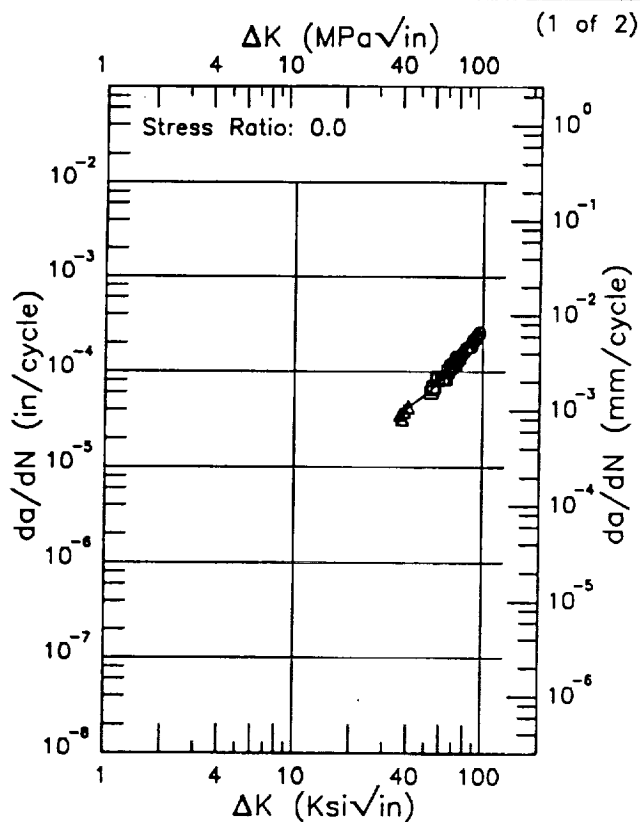
Yield Strength: 26.5 ksi

Ult. Strength: 71.5 ksi

Specimen Thk: 0.4 in.

Specimen Width: 13.701 - 14 in.

Ref: EPGES



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
36.29 (min)	33.4
40.	42.2
50.	58.6
60.	81.6
70.	121.
80.	166.
90.	218.
94.88 (max)	256.

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
48.75 (min)	50.8
50.	51.8
60.	99.1
61.10 (max)	104.

RMS %  
Error  
5.43

Life Prediction Ratio Summary

□○

0. .5 .8 1.25 2.---

RMS %  
Error  
14.42

Life Prediction Ratio Summary

0. .5 .8 1.25 2.---

Condition/Ht: ANNEALED

Form: Plate

Specimen Type: CCP (max load specified)

Orientation:

Stress Ratio: 0.

Frequency: 0.2 Hz

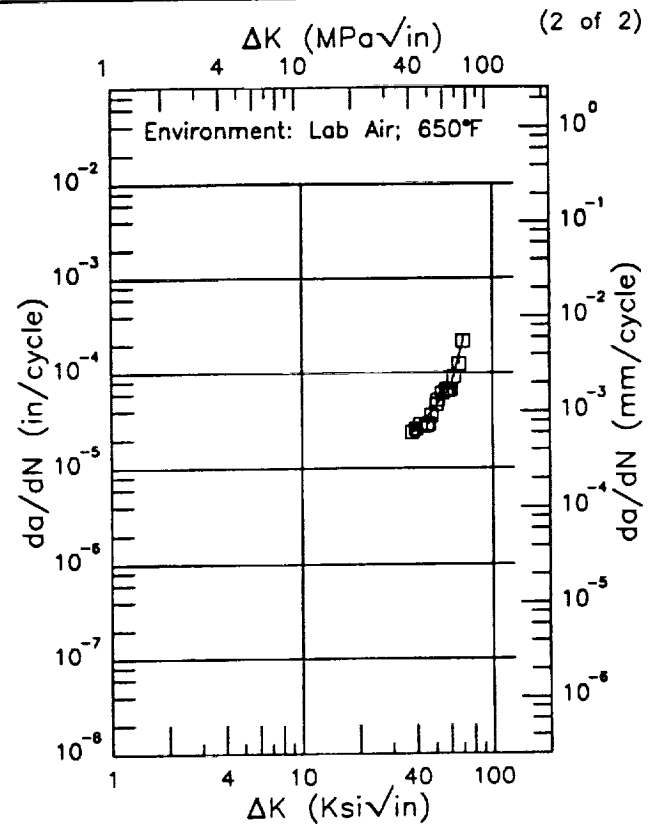
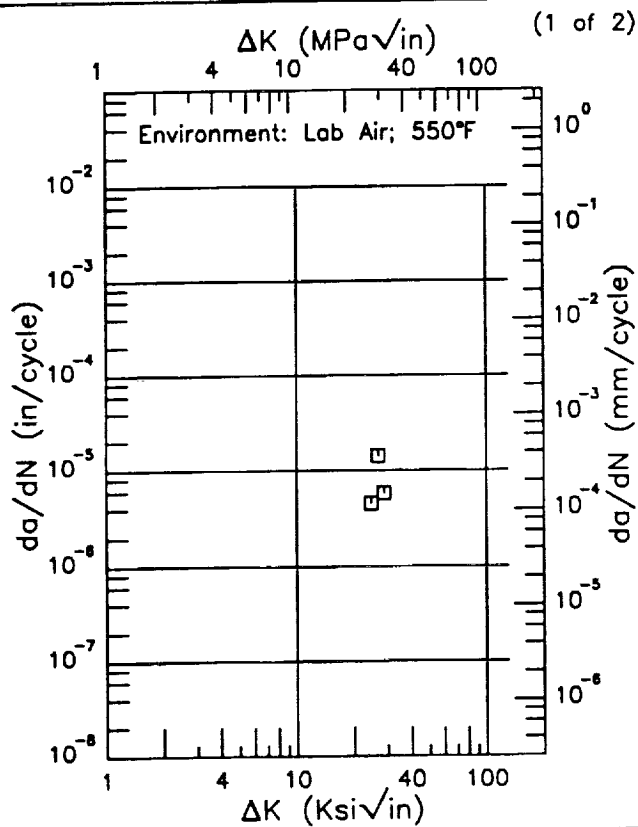
Yield Strength: 26.5 ksi

Ult. Strength: 71.5 ksi

Specimen Thk: 0.25 in.

Specimen Width: 5 in.

Ref: EPGES

 $\Delta K$  (Ksi $\sqrt{\text{in}}$ )      da/dN ( $10^{-6}$  in/cycle) $\Delta K$  (Ksi $\sqrt{\text{in}}$ )      da/dN ( $10^{-6}$  in/cycle)

37.62 (min)

23.3

40.

26.9

50.

43.7

60.

70.4

70.

208.

70.16 (max)

213.

RMS %  
Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS %  
Error  
10.28

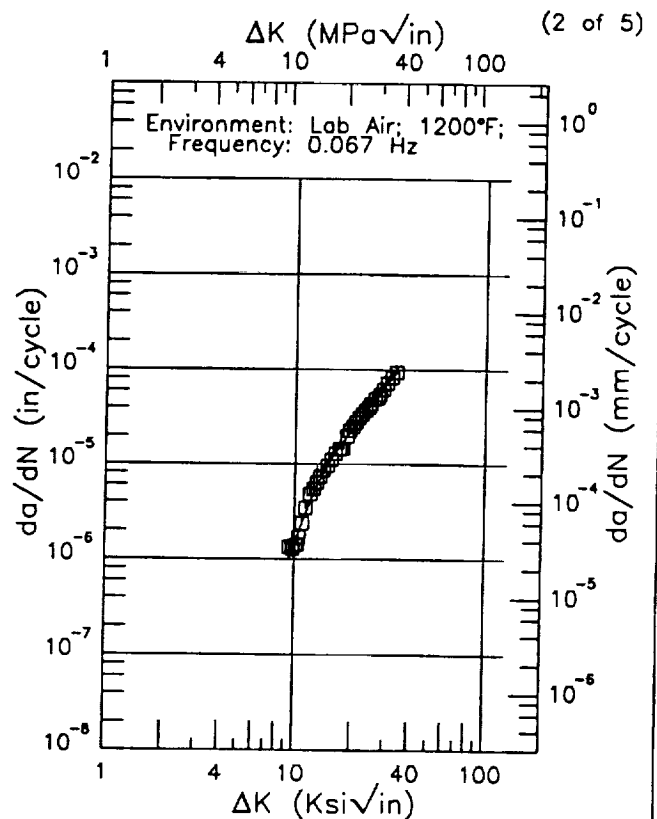
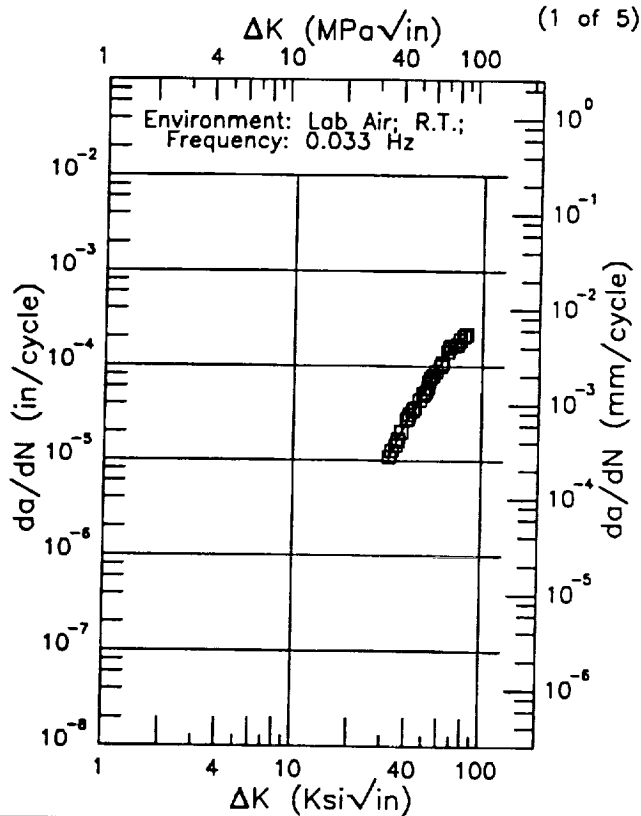
Life Prediction Ratio Summary

0. .5 .8 1.25 2.

EF 304

Condition/Ht: ANNEALED  
 Form: Plate  
 Specimen Type: SENT  
 Orientation:  
 Stress Ratio: 0. - 0.05

Yield Strength: 39.6 ksi  
 Ult. Strength: 77.1 ksi  
 Specimen Thk: 0.491 - 0.497 in.  
 Specimen Width: 4.898 - 4.95 in.  
 Ref: EPADD



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
31.99 (min)	10.6
35.	15.8
40.	27.0
50.	57.4
60.	107.
70.	165.
80.	207.
81.33 (max)	218.

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
9.34 (min)	0.967
10.	1.50
13.	5.84
16.	12.6
20.	24.0
25.	43.8
30.	69.5
33.78 (max)	95.1

RMS %  
 Error  
 4.48

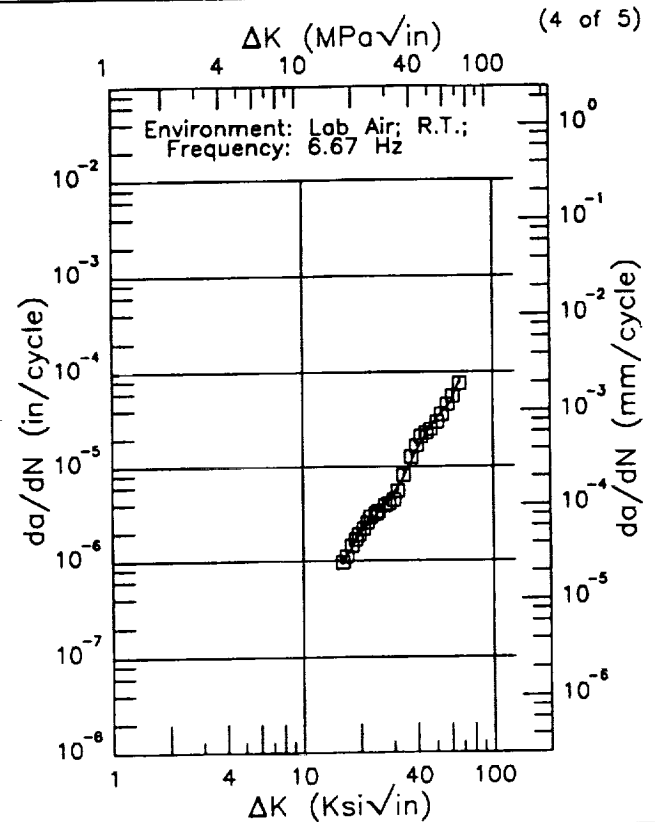
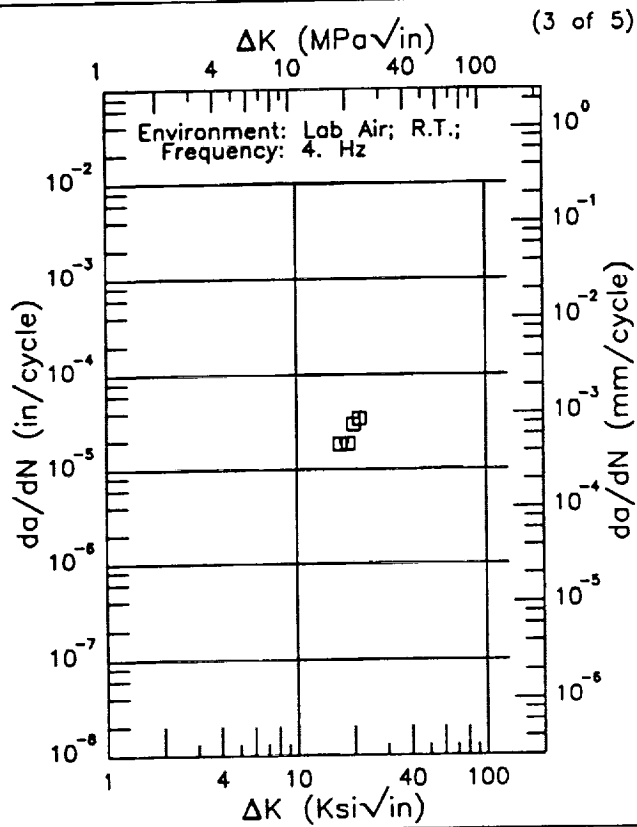
Life Prediction Ratio Summary  
  
 0. .5 .8 1.25 2.

RMS %  
 Error  
 10.22

Life Prediction Ratio Summary  
  
 0. .5 .8 1.25 2.

Condition/Ht: ANNEALED  
 Form: Plate  
 Specimen Type: SENT  
 Orientation:  
 Stress Ratio: 0. - 0.05

Yield Strength: 39.6 ksi  
 Ult. Strength: 77.1 ksi  
 Specimen Thk: 0.491 - 0.497 in.  
 Specimen Width: 4.898 - 4.95 in.  
 Ref: EPADD



$\Delta K$  (Ksi√in)       $da/dN$  ( $10^{-6}$  in/cycle)

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
16.06 (min)	0.926
20.	1.98
25.	3.30
30.	5.16
35.	8.81
40.	15.5
50.	32.9
60.	47.7
66.44 (max)	80.0

RMS %  
 Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

RMS %  
 Error  
 7.57

Life Prediction Ratio Summary

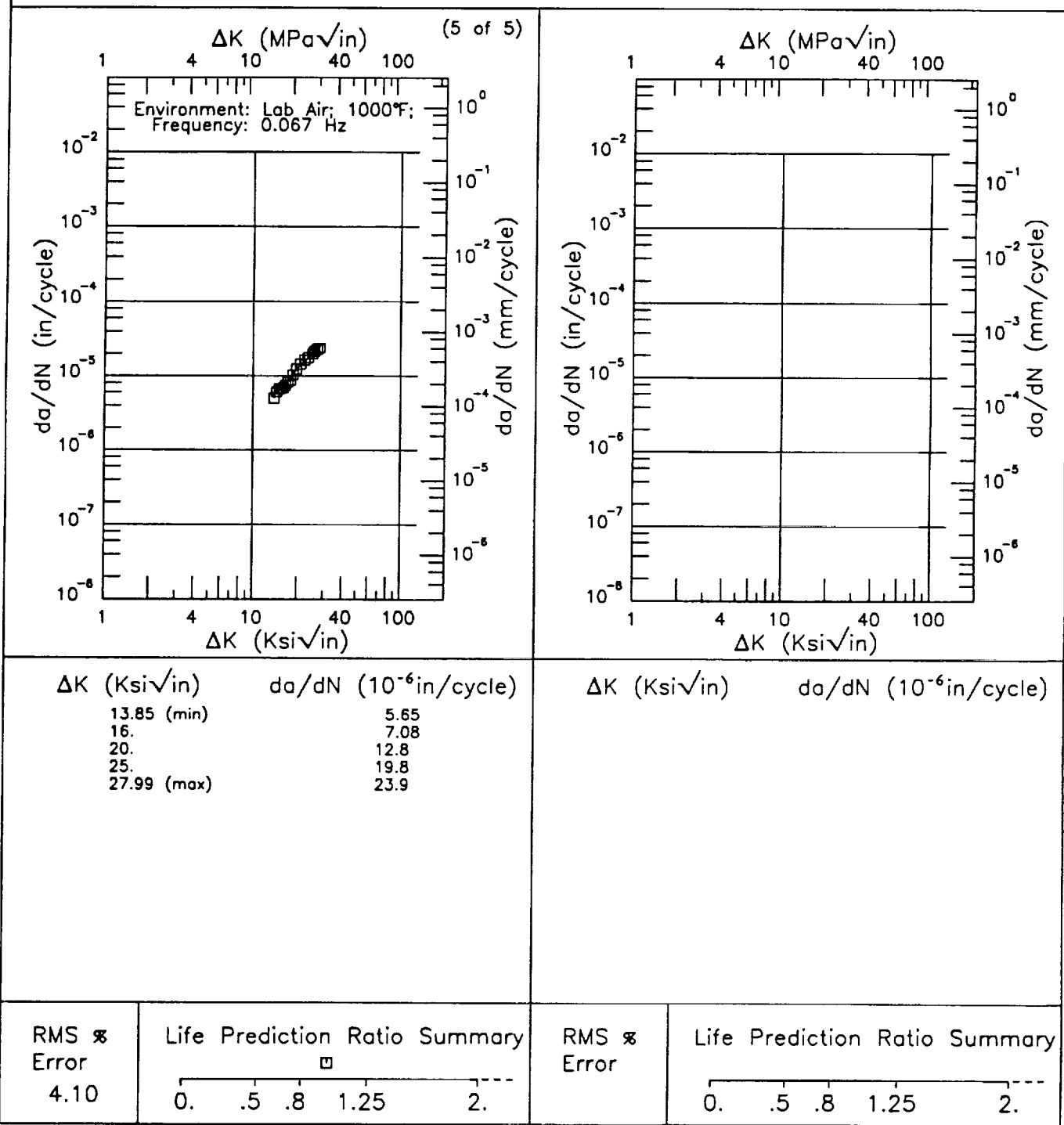
0. .5 .8 1.25 2. ---



EF 304

Condition/Ht: ANNEALED  
 Form: Plate  
 Specimen Type: SENT  
 Orientation:  
 Stress Ratio: 0. - 0.05

Yield Strength: 39.6 ksi  
 Ult. Strength: 77.1 ksi  
 Specimen Thk: 0.491 - 0.497 in.  
 Specimen Width: 4.898 - 4.95 in.  
 Ref: EPADD



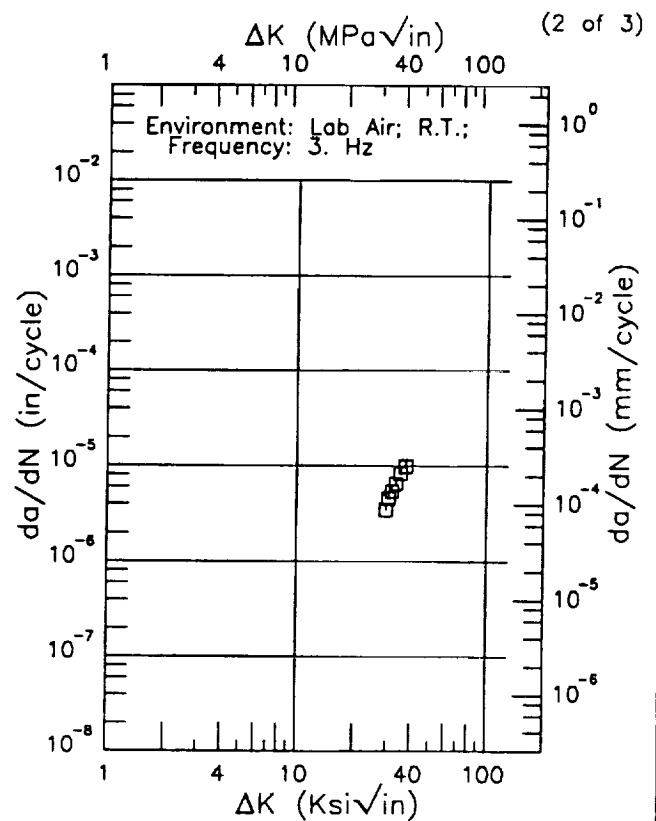
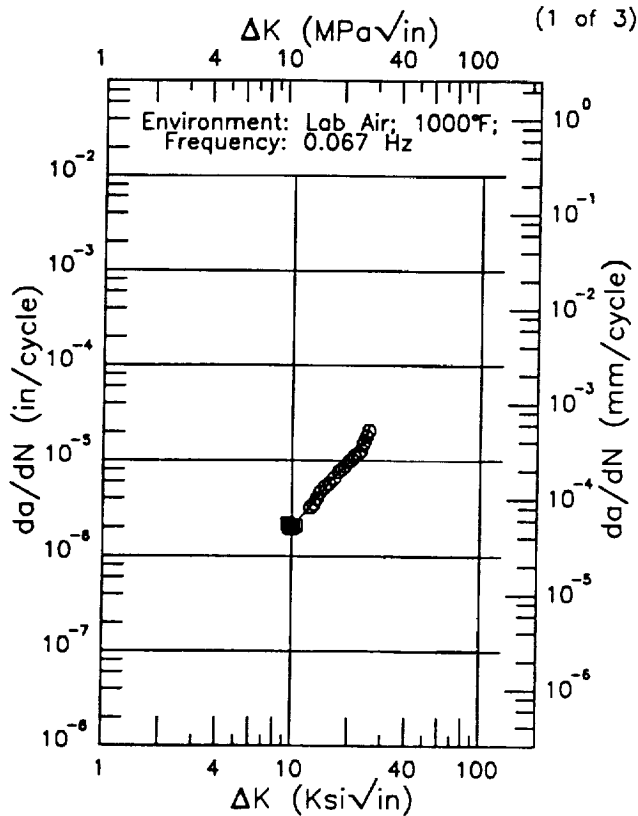
A1-18

EF

304

Condition/Ht: ANNEALED  
 Form: Plate  
 Specimen Type: SENT  
 Orientation:  
 Stress Ratio: 0. - 0.

Yield Strength: 39.6 ksi  
 Ult. Strength: 77.1 ksi  
 Specimen Thk: 0.493 - 0.496 in.  
 Specimen Width: 4.91 - 4.918 in.  
 Ref: EPADD



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ (10 <sup>-6</sup> in/cycle)
9.47 (min)	1.99
10.	2.01
13.	3.56
16.	6.24
20.	9.56
25.	19.3
25.32 (max)	20.8

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ (10 <sup>-6</sup> in/cycle)
--------------------------------------	-------------------------------------

RMS %  
 Error  
 5.67

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS %  
 Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

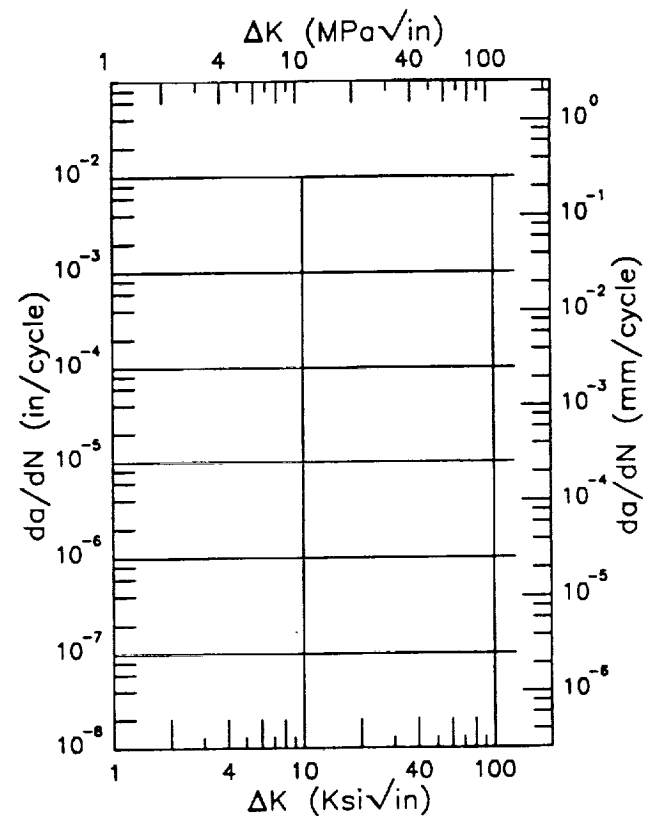
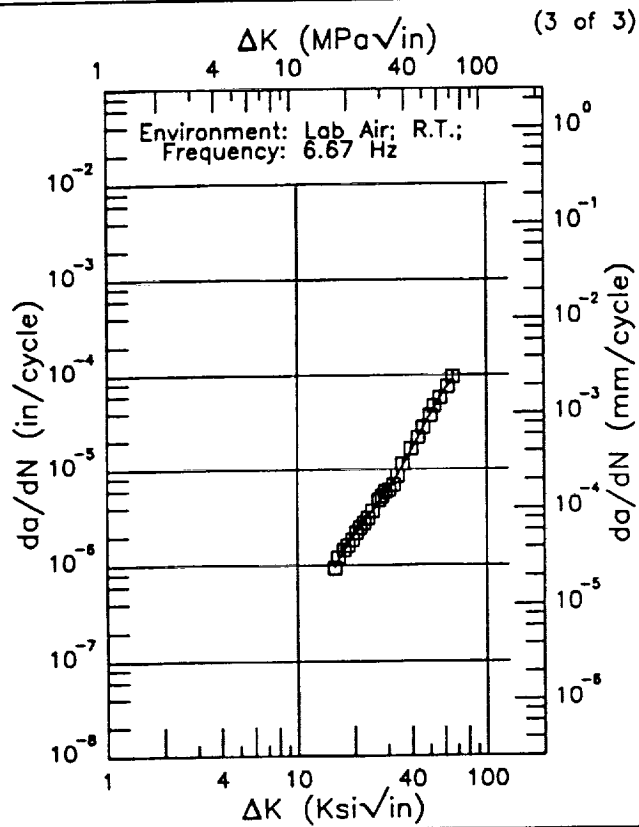
A1-19

PAGE 18 INTENTIONALLY BLANK

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Condition/Ht: ANNEALED  
 Form: Plate  
 Specimen Type: SENT  
 Orientation:  
 Stress Ratio: 0. - 0.

Yield Strength: 39.6 ksi  
 Ult. Strength: 77.1 ksi  
 Specimen Thk: 0.493 - 0.496 in.  
 Specimen Width: 4.91 - 4.918 in.  
 Ref: EPADD

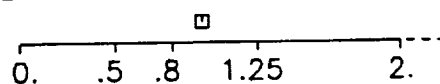


$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
15.71 (min)	0.997
16.	1.06
20.	2.08
25.	3.73
30.	6.15
35.	10.1
40.	16.4
50.	37.8
60.	69.8
66.20 (max)	92.3

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
--------------------------------------	-----------------------------------

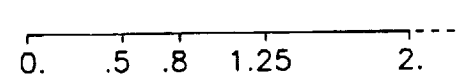
RMS %  
 Error  
 3.73

Life Prediction Ratio Summary



RMS %  
 Error

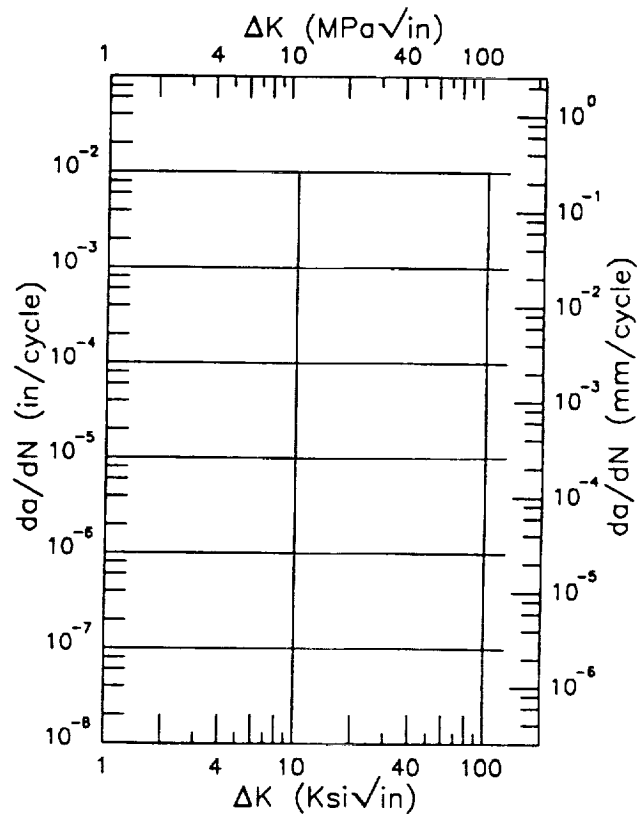
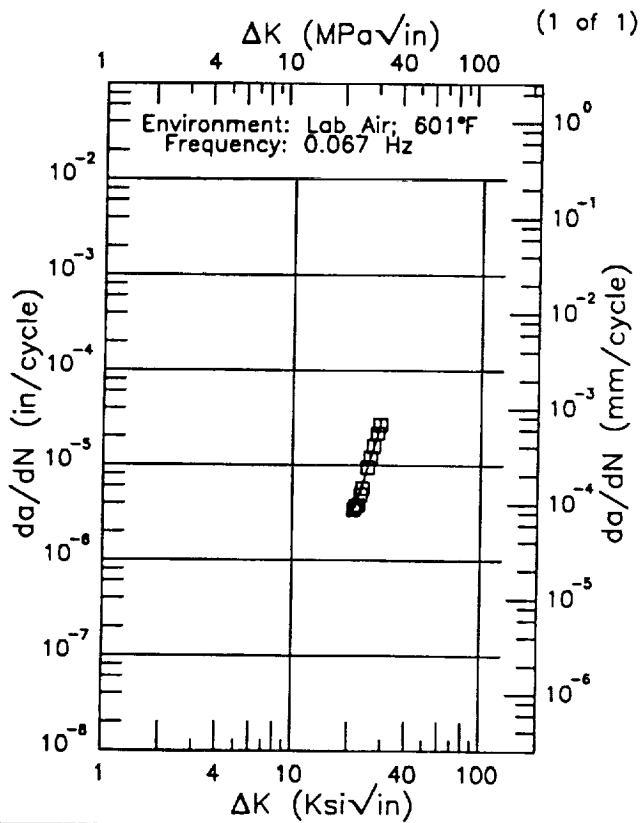
Life Prediction Ratio Summary



EF 304

Condition/Ht: ANNEALED  
Form:  
Specimen Type: CT  
Orientation:  
Stress Ratio: 0.05

Yield Strength: 39.6 ksi  
Ult. Strength: 77.1 ksi  
Specimen Thk: 0.494 in.  
Specimen Width: 2 in.  
Ref: EPWCS



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
20.94 (min)	3.36
25.	9.63
28.98 (max)	25.9

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)

RMS %  
Error  
8.73

Life Prediction Ratio Summary

0. .5 .8 1.25 2.---

RMS %  
Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.---

A1-22

R 304

Condition/Ht: ANNEALED

Form:

Specimen Type: CT

Orientation:

Frequency: 6.7 Hz

Environment: LAB AIR; 801°F

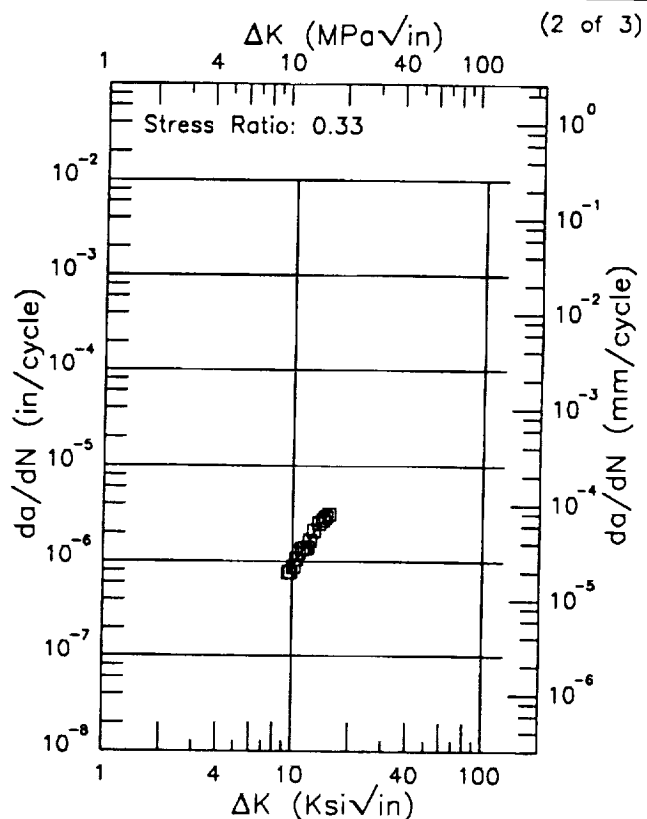
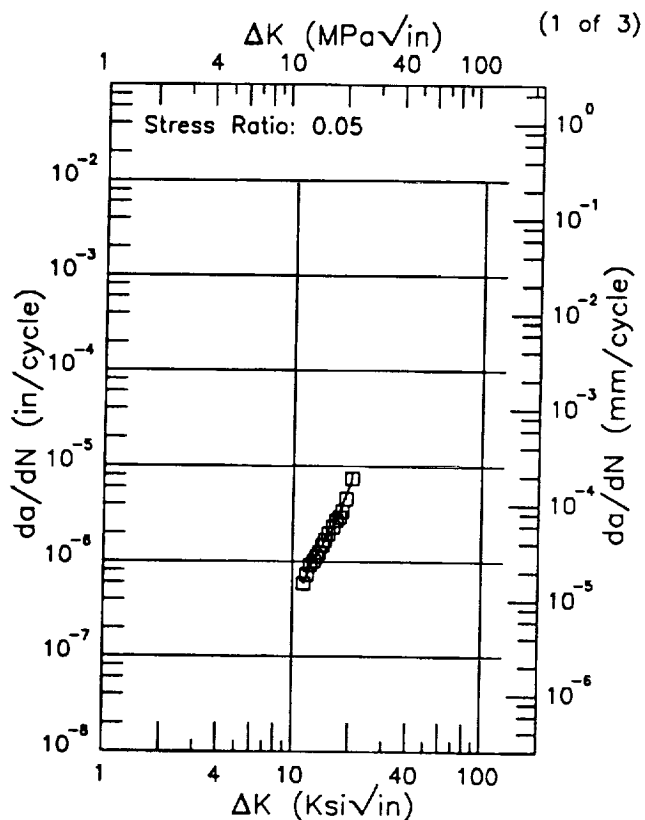
Yield Strength: 39.6 ksi

Ult. Strength: 77. ksi

Specimen Thk: 0.492 - 0.495 in.

Specimen Width: 2.001 - 2.002 in.

Ref: EPWHN

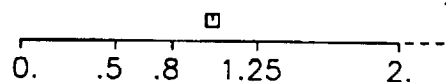


ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
11.40 (min)	0.598
13.	1.09
16.	2.13
20.	6.52
20.22 (max)	7.08

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
9.48 (min)	0.744
10.	0.874
13.	2.03
15.53 (max)	3.17

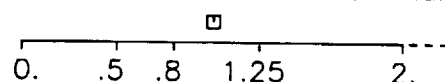
RMS %  
Error  
6.77

Life Prediction Ratio Summary



RMS %  
Error  
5.66

Life Prediction Ratio Summary



A1-23

PAGE 22 INTENTIONALLY BLANK

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Condition/Ht: ANNEALED

Form:

Specimen Type: CT

Orientation:

Frequency: 6.7 Hz

Environment: LAB AIR; 801°F

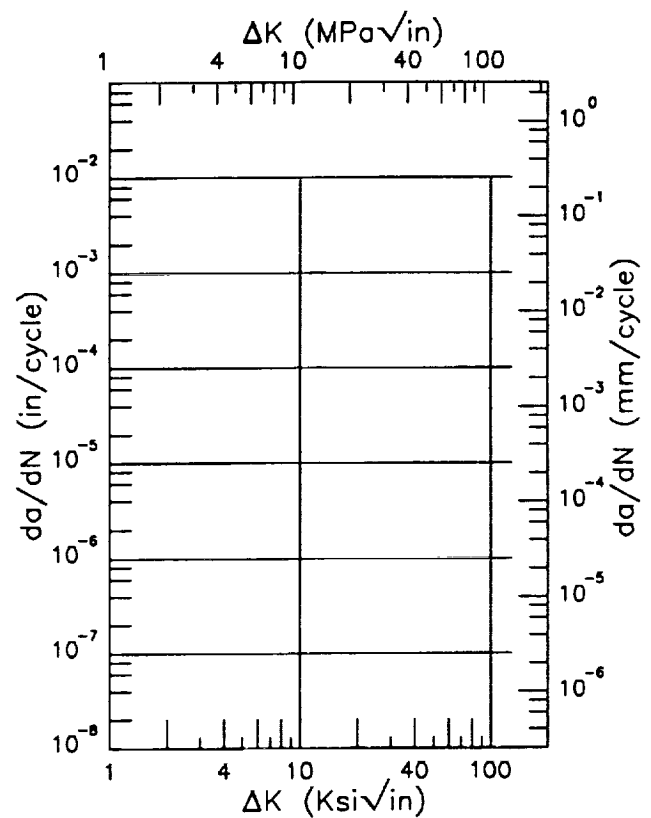
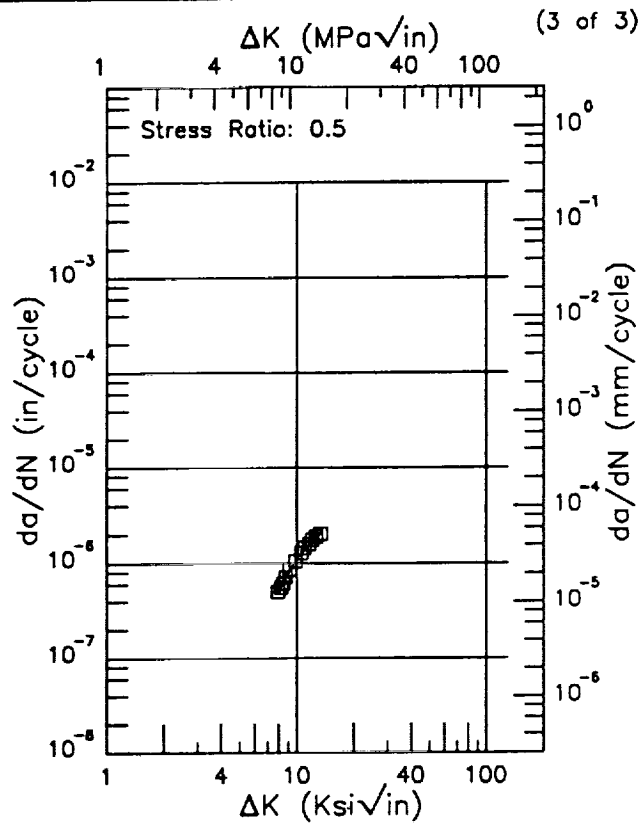
Yield Strength: 39.6 ksi

Ult. Strength: 77. ksi

Specimen Thk: 0.492 - 0.495 in.

Specimen Width: 2.001 - 2.002 in.

Ref: EPWHN

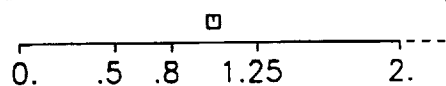


$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ (10 <sup>-6</sup> in/cycle)
7.94 (min)	0.484
8.	0.499
9.	0.787
10.	1.12
13.	1.97
13.31 (max)	1.99

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ (10 <sup>-6</sup> in/cycle)
--------------------------------------	-------------------------------------

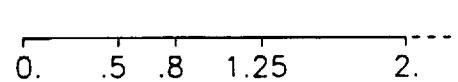
RMS %  
Error  
2.88

Life Prediction Ratio Summary



RMS %  
Error

Life Prediction Ratio Summary

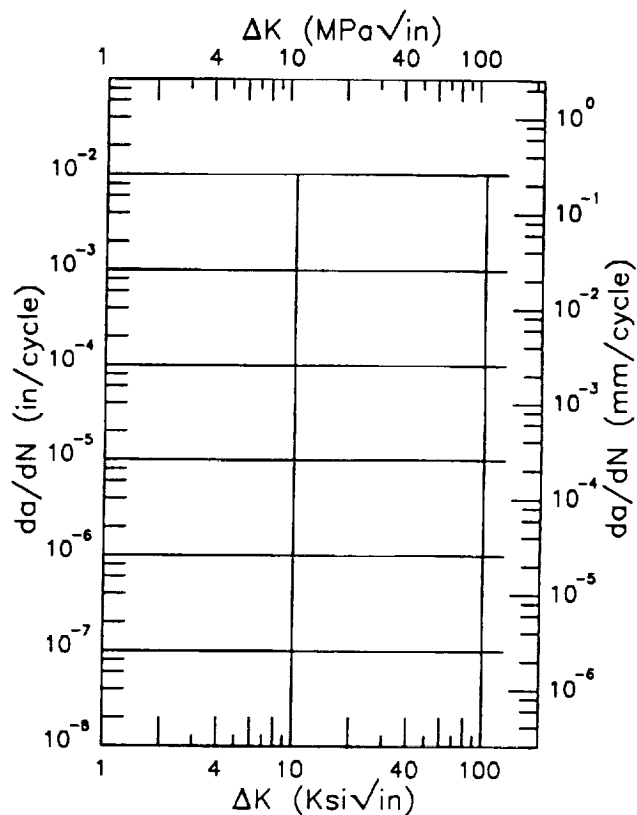
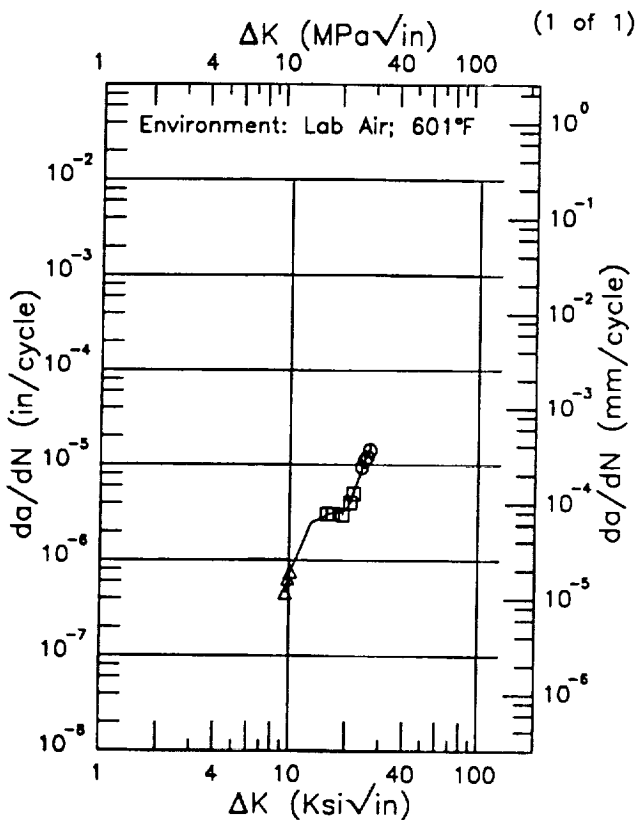




E | 304 |

Condition/Ht: ANNEALED  
 Form:  
 Specimen Type: SENT  
 Orientation:  
 Stress Ratio: 0.  
 Frequency: 0.1 Hz

Yield Strength: 39.6 ksi  
 Ult. Strength: 77.1 ksi  
 Specimen Thk: 0.494 in.  
 Specimen Width: 4.918 in.  
 Ref: EPWCS



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
9.47 (min)	0.480
10.	0.706
13.	2.47
16.	3.04
20.	3.42
25.	11.6
26.27 (max)	13.3

$\Delta K$  (Ksi $\sqrt{\text{in}}$ )      da/dN (10<sup>-6</sup>in/cycle)

RMS %  
 Error  
 5.19

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS %  
 Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

Condition/Ht: ANNEALED

Form:

Specimen Type: CT

Orientation:

Stress Ratio: 0.05

Frequency: 0.7 Hz

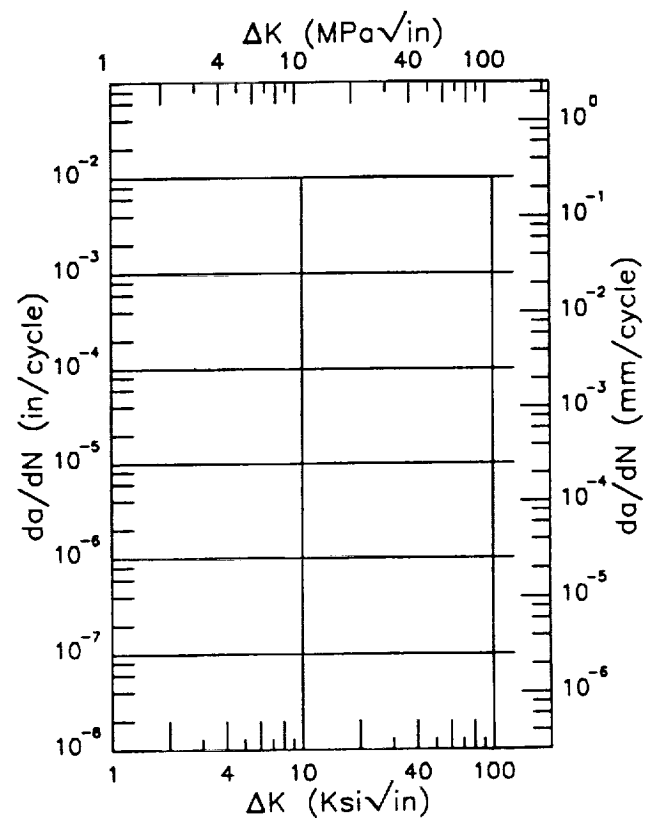
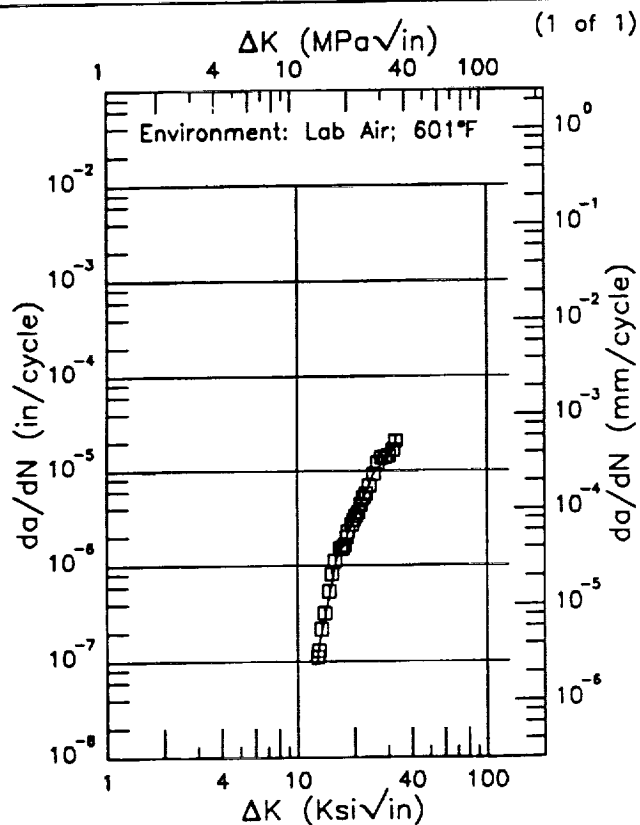
Yield Strength:

Ult. Strength:

Specimen Thk: 0.948 in.

Specimen Width: 2.547 in.

Ref: EPJAM

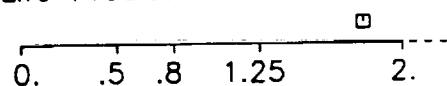


$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
12.72 (min)	0.103
13.	0.148
16.	1.14
20.	3.07
25.	9.27
30.	14.2
32.86 (max)	20.3

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
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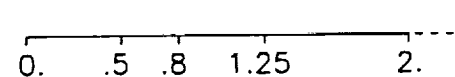
RMS %  
Error  
10.35

Life Prediction Ratio Summary



RMS %  
Error

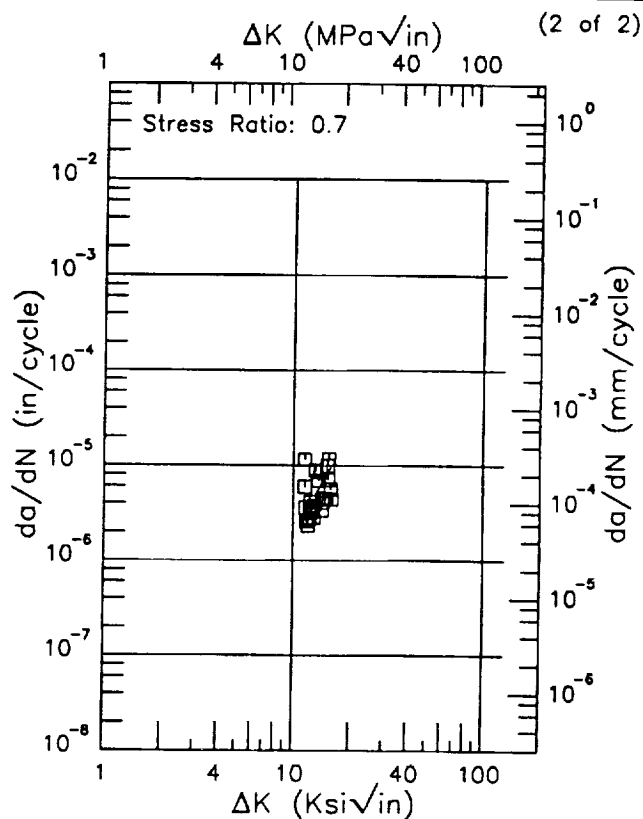
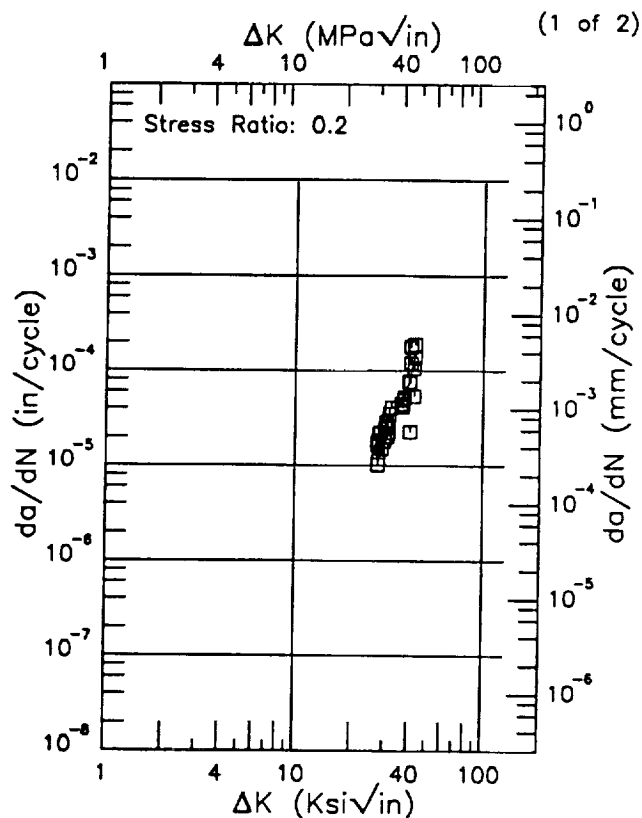
Life Prediction Ratio Summary



R 304

Condition/Ht: ANNEALED AT 1052(C) FOR  
 Form: Forging  
 Specimen Type: CT  
 Orientation:  
 Frequency: 0.3 Hz  
 Environment: PWR WATER;550°F

Yield Strength: 23.6 ksi  
 Ult. Strength: 71.9 ksi  
 Specimen Thk: 2 in.  
 Specimen Width: 5.11 in.  
 Ref: EPWHS



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
27.18 (min)	13.4
30.	25.2
35.	42.1
40.	76.2
43.00 (max)	150.

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
11.45 (min)	4.68
13.	4.77
15.85 (max)	9.61

RMS %  
 Error  
 29.67

Life Prediction Ratio Summary  
 0. .5 .8 1.25 2.---

RMS %  
 Error  
 46.30

Life Prediction Ratio Summary  
 0. .5 .8 1.25 2.---

A1-28

R 304

Condition/Ht: AS ROLL

Form: Bar

Specimen Type: CCP (max load specified)

Orientation: L-T

Frequency: 5 Hz

Environment: LAB AIR; RT

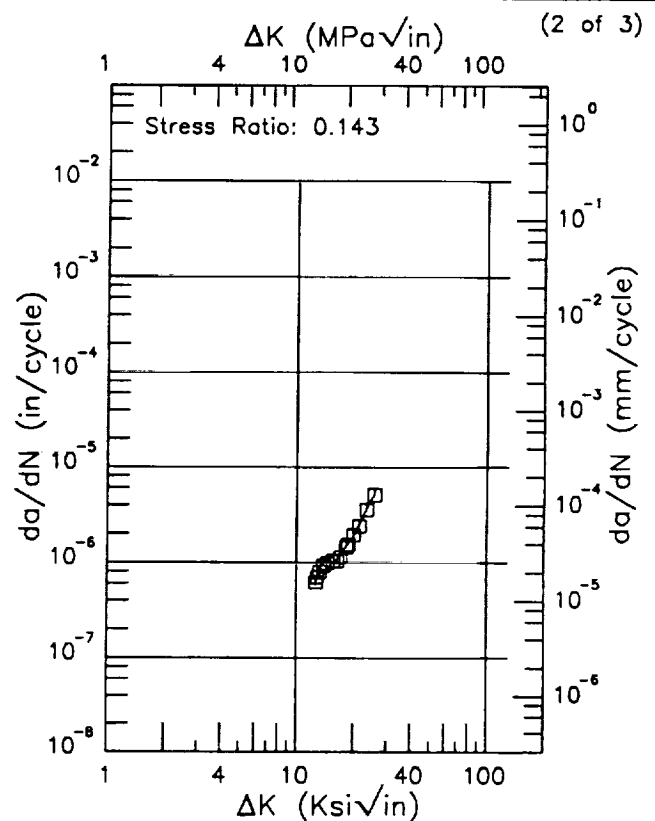
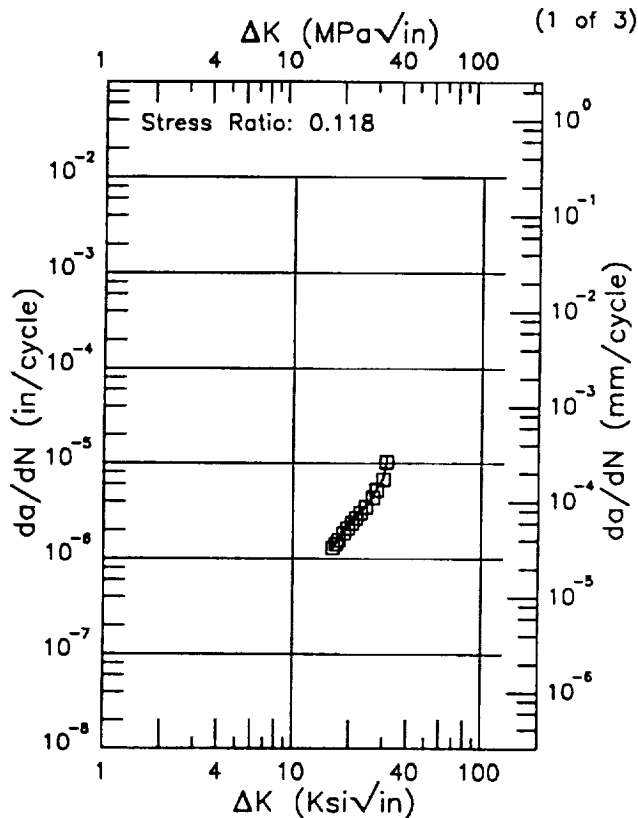
Yield Strength: 37.6 ksi

Ult. Strength: 84.2 ksi

Specimen Thk: 0.394 in.

Specimen Width: 6.299 in.

Ref: EPFUND



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
16.14 (min)	1.29
20.	2.25
25.	3.79
30.	7.19
31.05 (max)	10.1

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
12.60 (min)	0.594
13.	0.731
16.	1.02
20.	1.92
25.	4.77
25.65 (max)	5.05

RMS %  
Error  
2.36

Life Prediction Ratio Summary  
0. .5 .8 1.25 2.

RMS %  
Error  
5.89

Life Prediction Ratio Summary  
0. .5 .8 1.25 2.

A1-29

PAGE 28 INTENTIONALLY BLANK  
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Condition/Ht: AS ROLL

Form: Bar

Specimen Type: CCP (max load specified)

Orientation: L-T

Frequency: 5 Hz

Environment: LAB AIR; RT

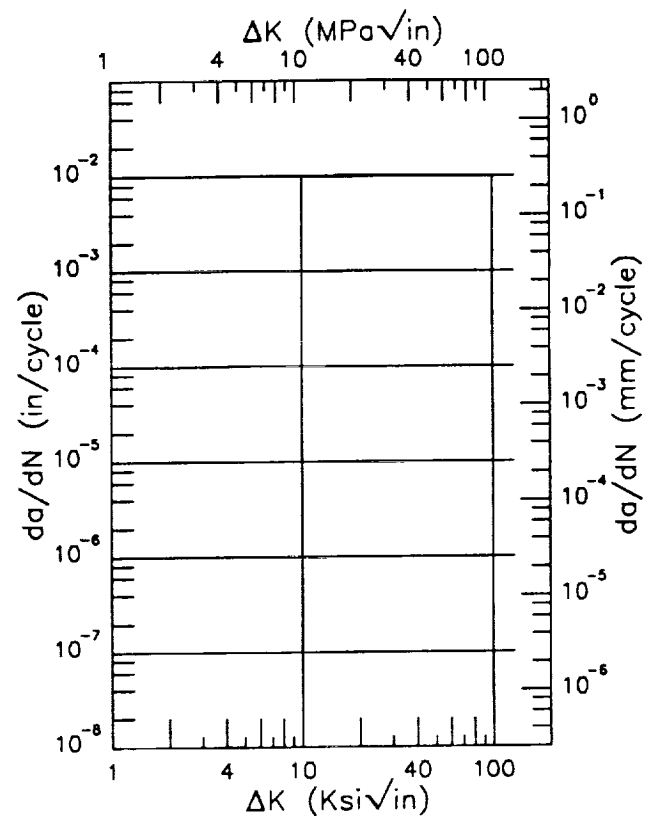
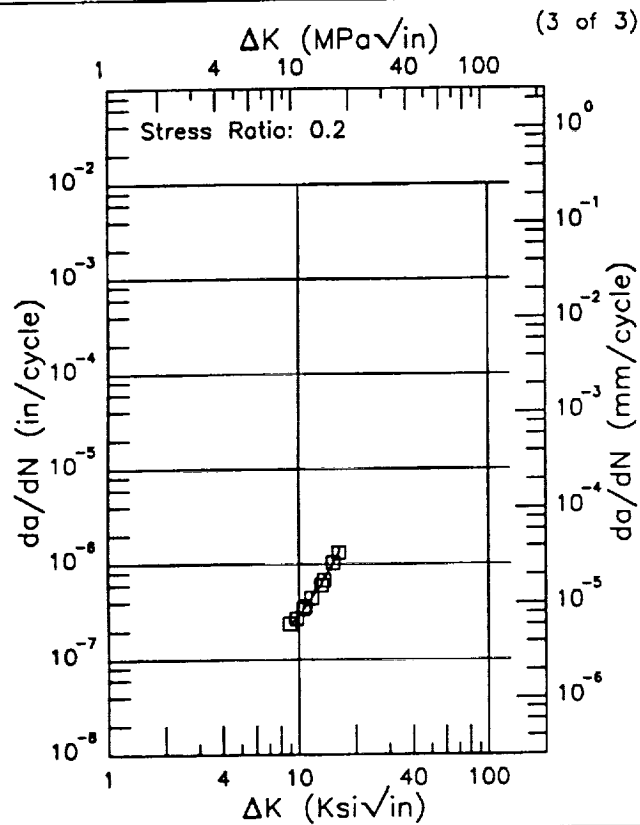
Yield Strength: 37.6 ksi

Ult. Strength: 84.2 ksi

Specimen Thk: 0.394 in.

Specimen Width: 6.299 in.

Ref: EPFUN

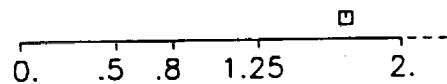


$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
8.93 (min)	0.237
9.	0.238
10.	0.291
13.	0.591
16.	1.26
16.17 (max)	1.31

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
--------------------------------------	-------------------------------

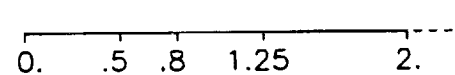
RMS %  
Error  
1.46

Life Prediction Ratio Summary



RMS %  
Error

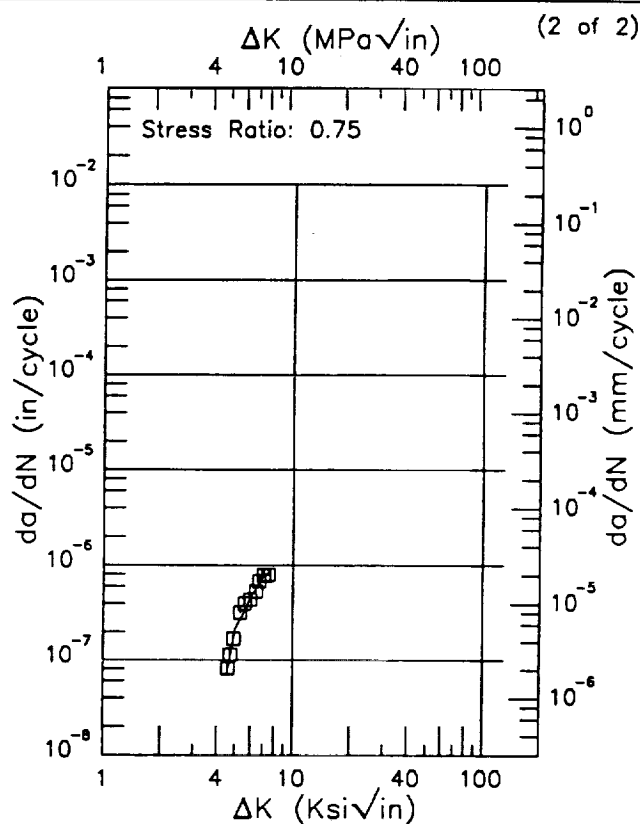
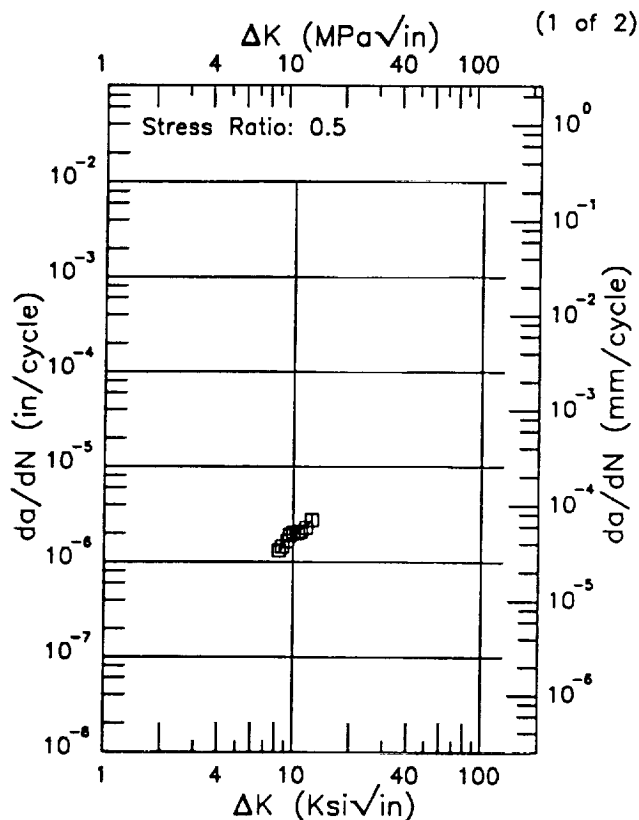
Life Prediction Ratio Summary



R | 304 |

Condition/Ht: SOLUTION ANNEALED  
 Form: Plate  
 Specimen Type: CT  
 Orientation:  
 Frequency: 6.7 Hz  
 Environment: LAB AIR;1000°F

Yield Strength: 39.7 ksi  
 Ult. Strength: 77.1 ksi  
 Specimen Thk: 0.492 in.  
 Specimen Width: 1.998 - 2.002 in.  
 Ref: EPADD



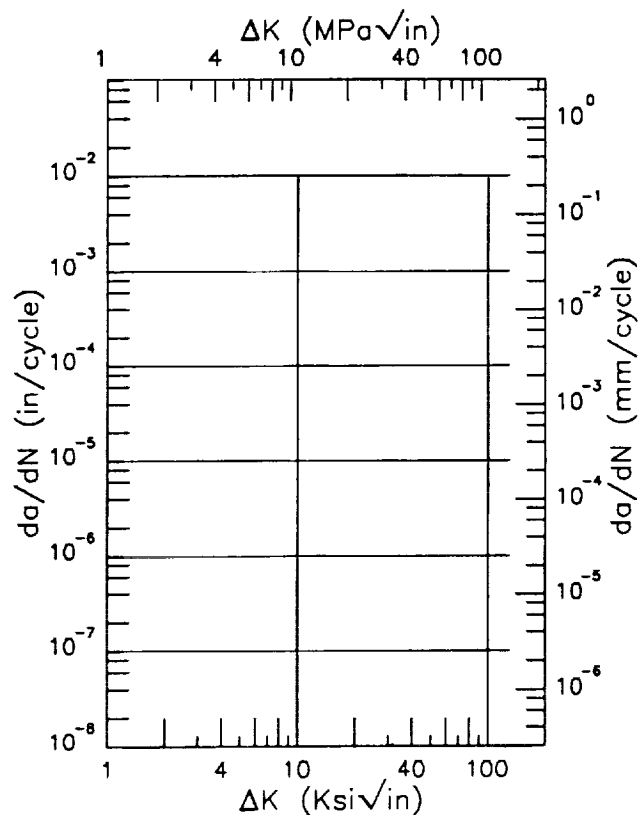
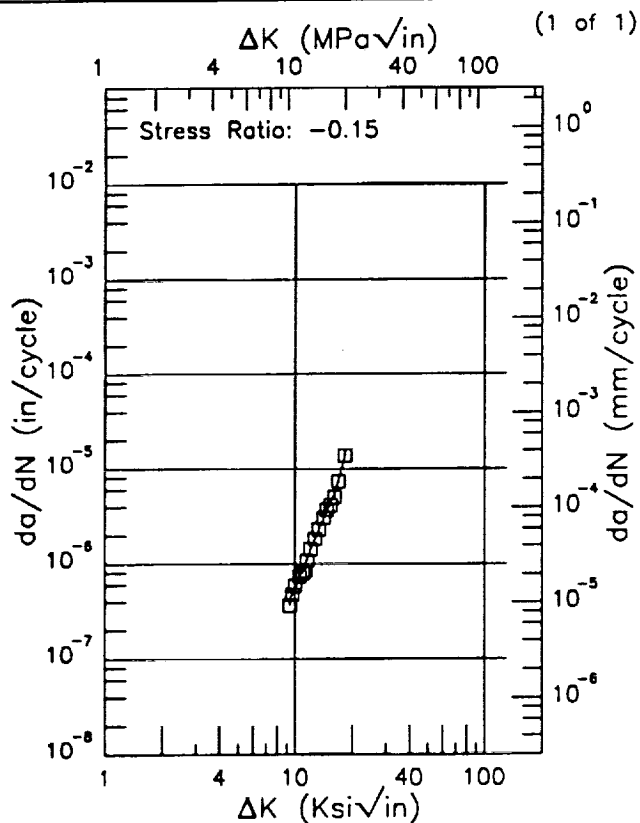
$\Delta K$ (Ksi√in)	$da/dN$ (10 <sup>-6</sup> in/cycle)	$\Delta K$ (Ksi√in)	$da/dN$ (10 <sup>-6</sup> in/cycle)
8.38 (min)	1.24	4.55 (min)	0.0734
9.	1.61	5.	0.215
10.	1.94	6.	0.463
12.51 (max)	2.68	7.	0.751
		7.39 (max)	0.818

RMS % Error	Life Prediction Ratio Summary	RMS % Error	Life Prediction Ratio Summary
4.81	0. .5 .8 1.25 2. ---	8.53	0. .5 .8 1.25 2. ---

Condition/Ht: SOLUTION ANNEALED  
 Form: Plate  
 Specimen Type: CT  
 Orientation:  
 Frequency: 6.7 Hz  
 Environment: LAB AIR;1000°F

Yield Strength: 39.7 ksi  
 Ult. Strength: 77.1 ksi  
 Specimen Thk: 0.353 in.  
 Specimen Width: 2 in.  
 Ref: EPADD



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ (10 <sup>-6</sup> in/cycle)
9.34 (min)	0.407
10.	0.548
13.	1.99
16.	5.33
18.24 (max)	13.7

$\Delta K$  (Ksi $\sqrt{\text{in}}$ )       $da/dN$  (10<sup>-6</sup> in/cycle)

RMS %  
 Error  
 6.75

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS %  
 Error

Life Prediction Ratio Summary

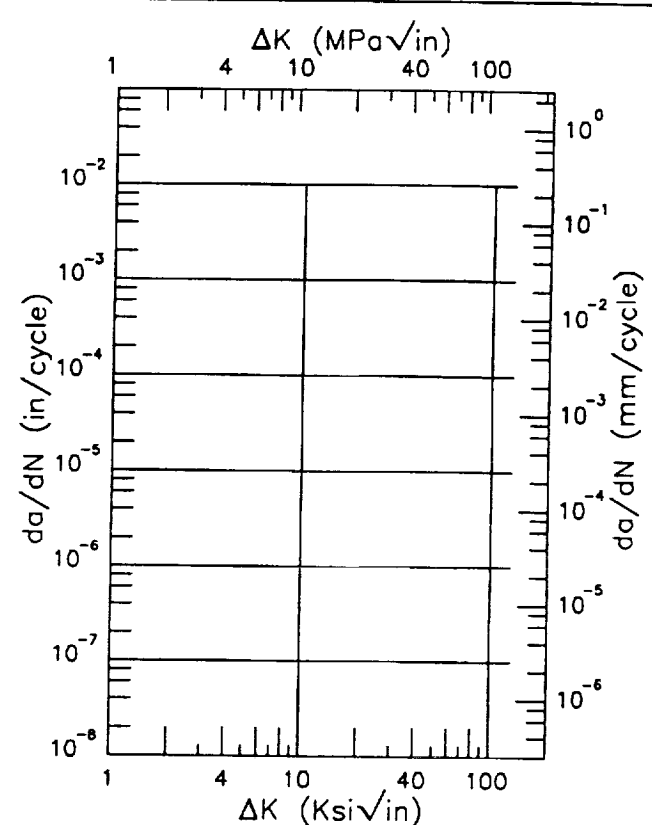
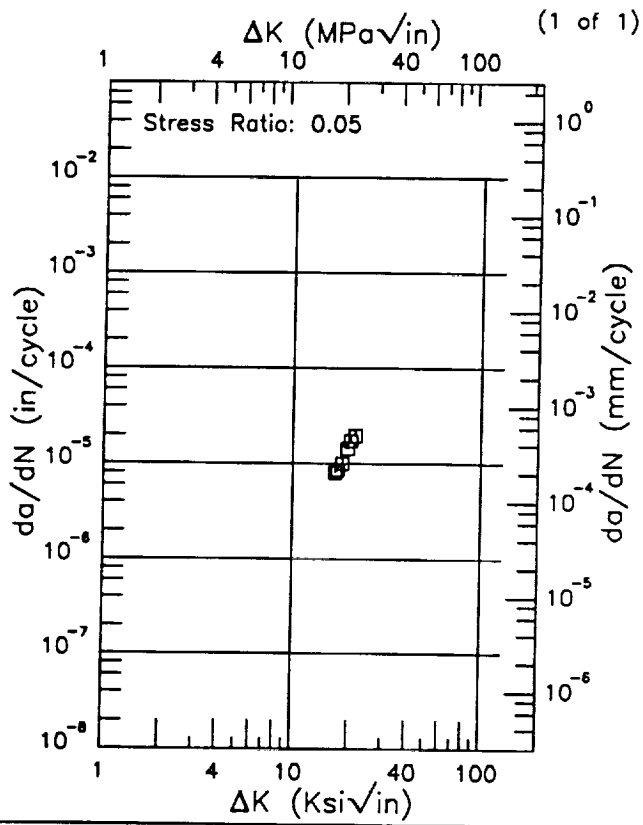
0. .5 .8 1.25 2.



R | 304 |

Condition/Ht: SOLUTION ANNEALED  
 Form: Plate  
 Specimen Type: CT  
 Orientation:  
 Frequency: 0.1 Hz  
 Environment: LAB AIR;1000°F

Yield Strength: 39.6 ksi  
 Ult. Strength: 77.1 ksi  
 Specimen Thk: 0.5 in.  
 Specimen Width: 2.002 in.  
 Ref: EPWHS

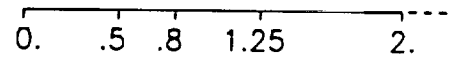


ΔK (Ksi√in)      da/dN (10<sup>-6</sup>in/cycle)

ΔK (Ksi√in)      da/dN (10<sup>-6</sup>in/cycle)

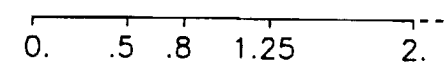
RMS %  
Error

Life Prediction Ratio Summary



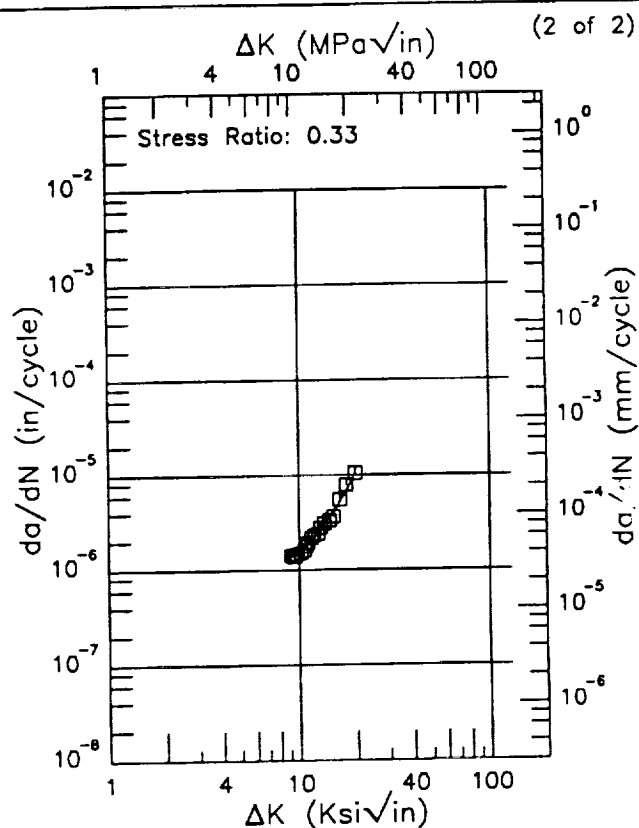
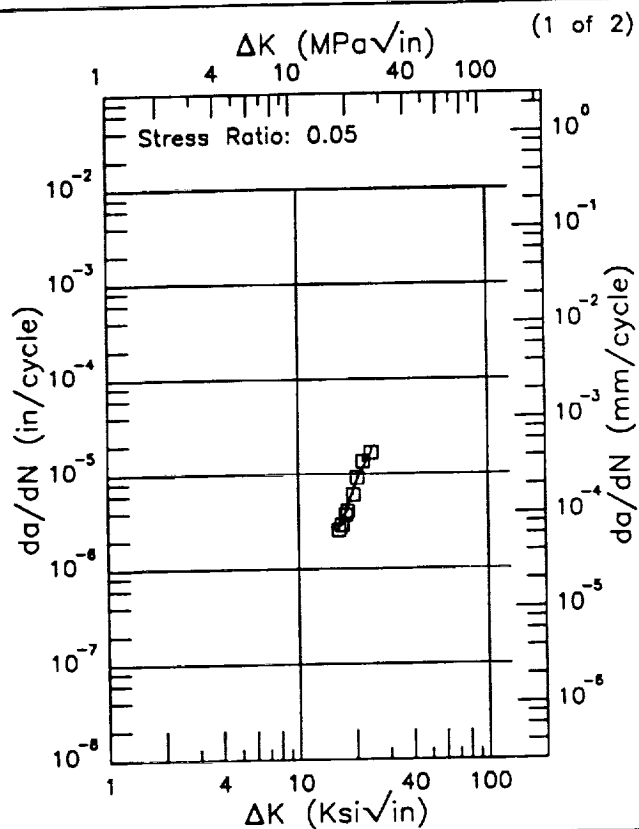
RMS %  
Error

Life Prediction Ratio Summary



Condition/Ht: SOLUTION ANNEALED  
 Form: Plate  
 Specimen Type: CT  
 Orientation:  
 Frequency: 6.7 Hz  
 Environment: LAB AIR; 1000°F

Yield Strength: 39.7 ksi  
 Ult. Strength: 77.1 ksi  
 Specimen Thk: 0.484 - 0.485 in.  
 Specimen Width: 1.996 - 2.008 in.  
 Ref: EPADD

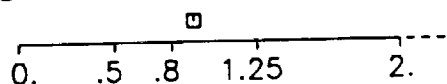


ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
16.15 (min)	2.50
20.	8.11
24.15 (max)	16.8

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
9.04 (min)	1.42
10.	1.45
13.	2.70
16.	4.78
19.75 (max)	10.3

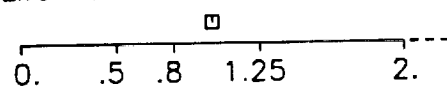
RMS %  
 Error  
 10.00

Life Prediction Ratio Summary



RMS %  
 Error  
 5.42

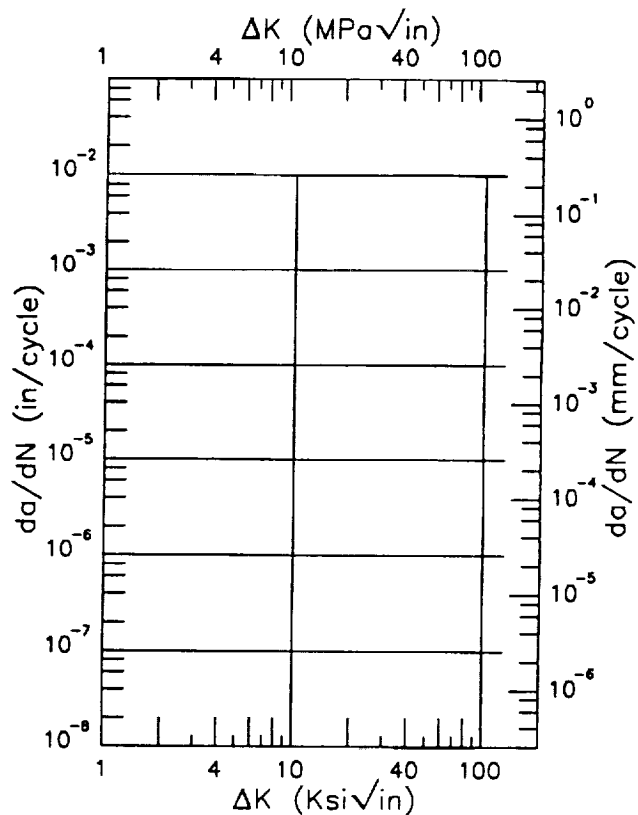
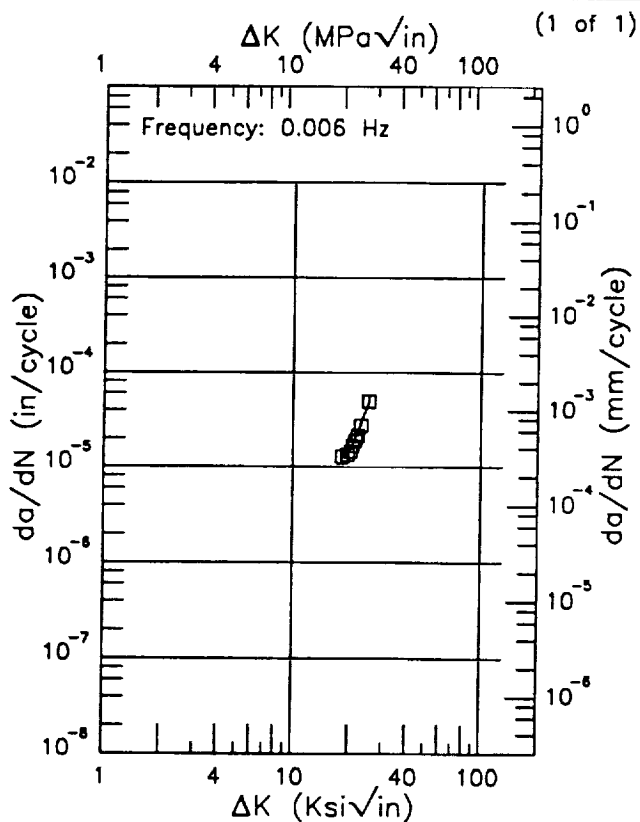
Life Prediction Ratio Summary



F | 304 |

Condition/Ht: SOLUTION ANNEALED  
 Form: Plate  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.05  
 Environment: LAB AIR;1000°F

Yield Strength: 39.6 ksi  
 Ult. Strength: 77.1 ksi  
 Specimen Thk: 0.487 in.  
 Specimen Width: 2.002 in.  
 Ref: EPWHS



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
18.22 (min)	12.6
20.	14.4
25.	46.9
25.17 (max)	49.1

$\Delta K$  (Ksi $\sqrt{\text{in}}$ )       $da/dN$  ( $10^{-6}$  in/cycle)

RMS %  
 Error  
 5.59

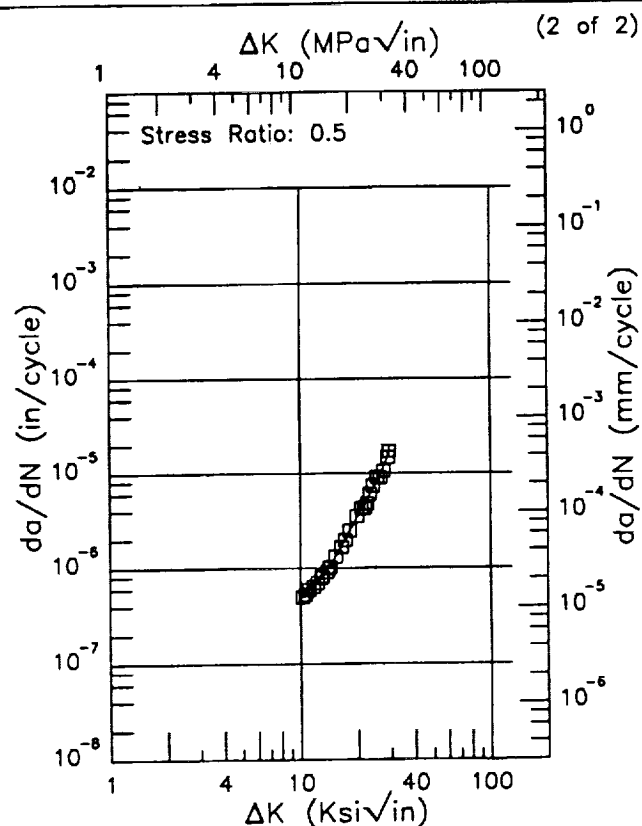
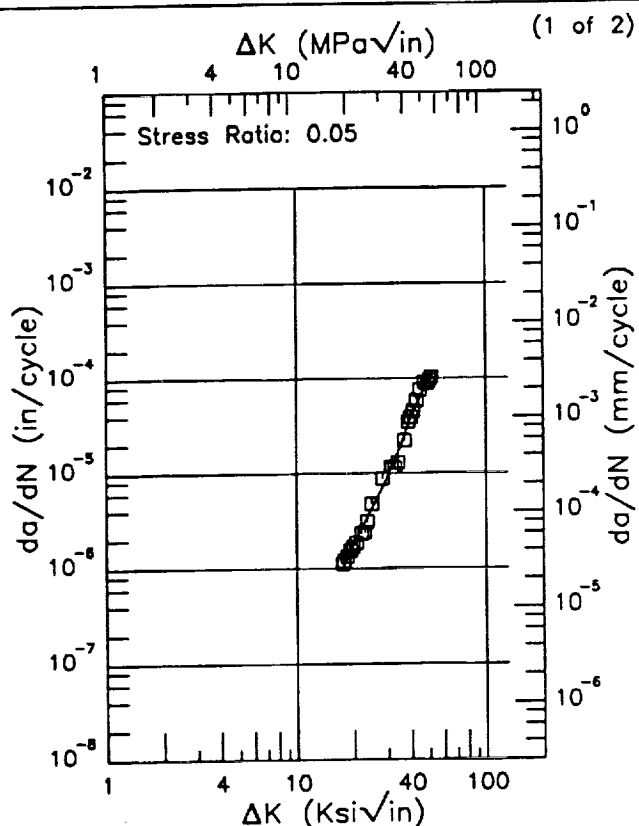
Life Prediction Ratio Summary  
 0. .5 .8 1.25 2. ---

RMS %  
 Error

Life Prediction Ratio Summary  
 0. .5 .8 1.25 2. ---

Condition/Ht: SOLUTION ANNEALED  
 Form: Plate  
 Specimen Type: CT  
 Orientation:  
 Frequency: 5 Hz  
 Environment: LAB AIR;550°F

Yield Strength: 39. ksi  
 Ult. Strength: 84. ksi  
 Specimen Thk: 0.999 - 1 in.  
 Specimen Width: 7.999 - 8.001 in.  
 Ref: EPWS1



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
17.34 (min)	0.972
20.	1.84
25.	4.40
30.	9.13
35.	18.9
40.	38.7
50.	102.
51.19 (max)	109.

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
10.19 (min)	0.505
13.	0.805
16.	1.51
20.	3.53
25.	7.84
29.32 (max)	16.1

RMS %  
 Error  
 12.69

Life Prediction Ratio Summary

□

0. .5 .8 1.25 2.

RMS %  
 Error  
 5.34

Life Prediction Ratio Summary

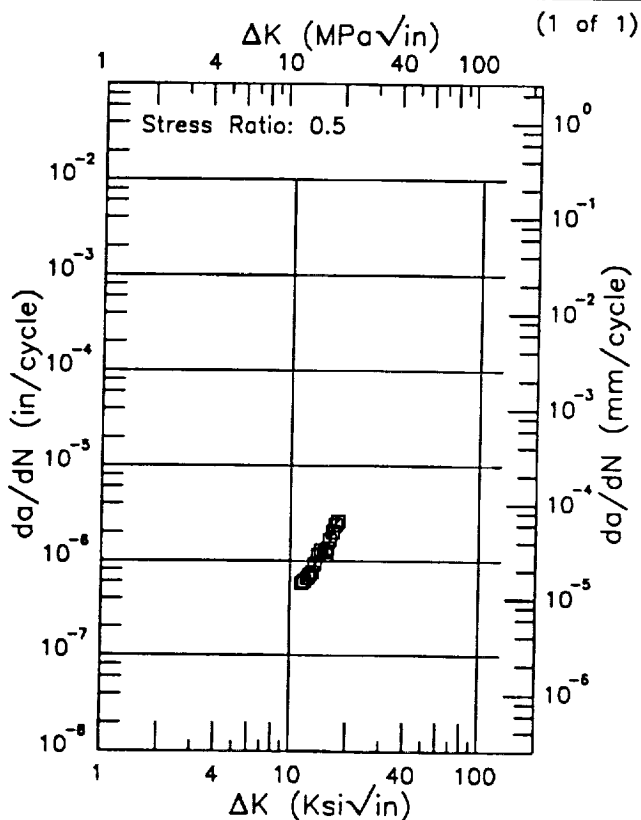
□

0. .5 .8 1.25 2.

304

Condition/Ht: SOLUTION ANNEALED  
Form: Plate  
Specimen Type: CT  
Orientation:  
Frequency: 5 Hz  
Environment: LAB AIR;550°F

Yield Strength: 39. ksi  
Ult. Strength: 84. ksi  
Specimen Thk: 0.252 in.  
Specimen Width: 1.999 in.  
Ref: EPWS1

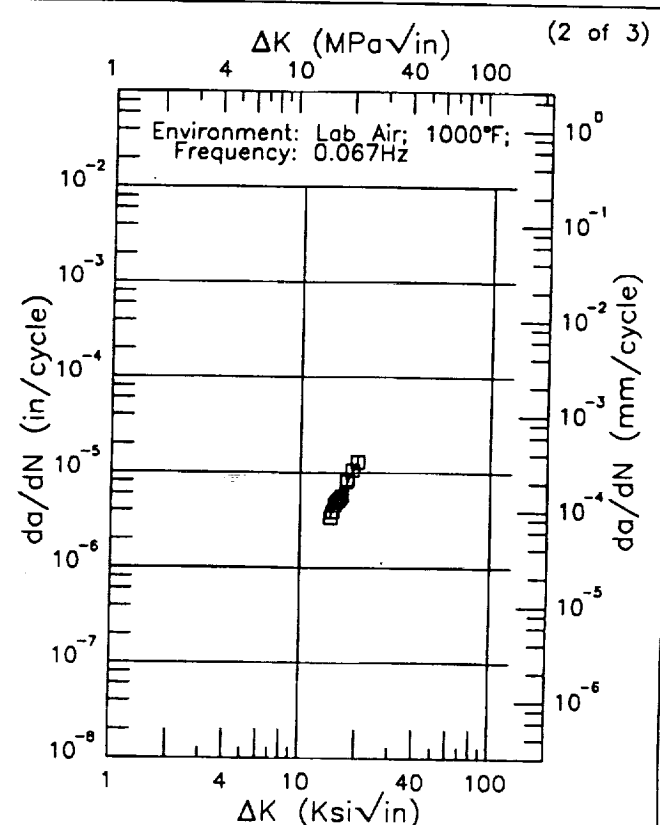
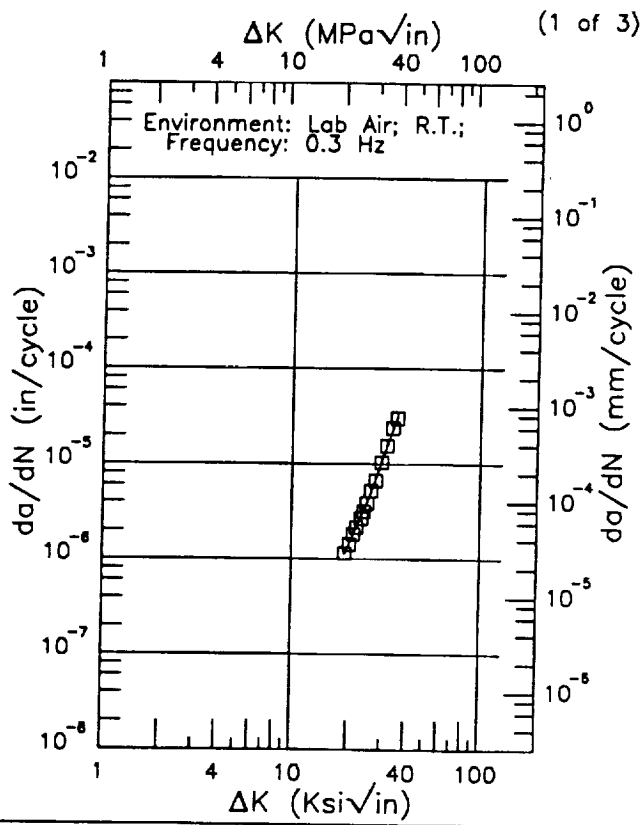


A1-38

EF 304

Condition/Ht: SOLUTION ANNEALED  
 Form: Plate  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.05

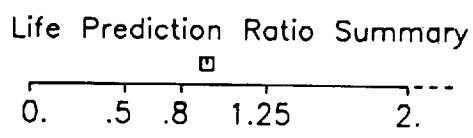
Yield Strength: 39.3 - 39.6 ksi  
 Ult. Strength: 77.1 - 90.8 ksi  
 Specimen Thk: 0.456 - 0.505 in.  
 Specimen Width: 1.996 - 2.008 in.  
 Ref: EPWS1;EPWS



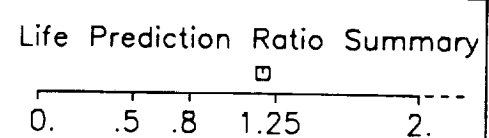
ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
19.07 (min)	1.13
20.	1.39
25.	3.95
30.	11.3
35.	27.5
35.78 (max)	30.1

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
14.42 (min)	3.55
16.	5.30
19.87 (max)	12.9

RMS %  
 Error  
 2.50

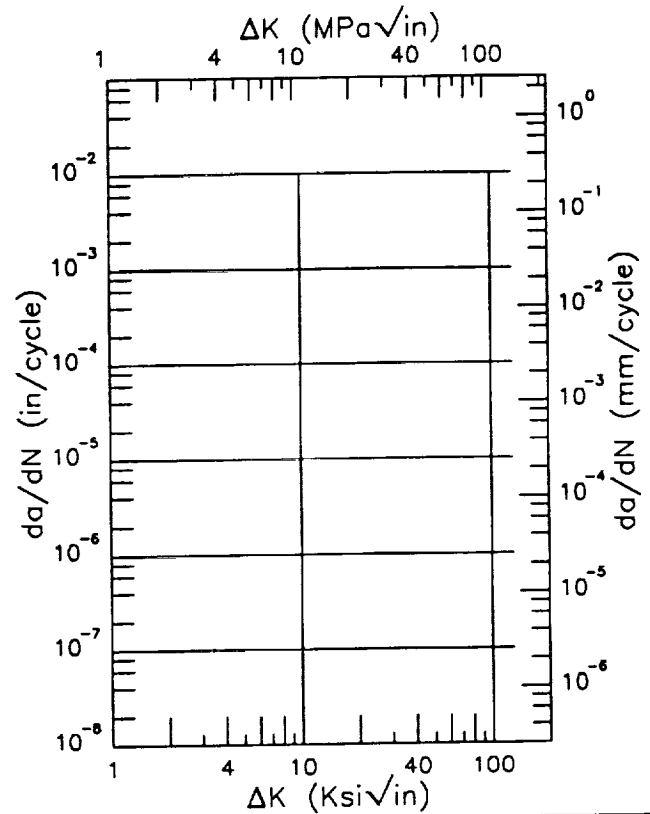
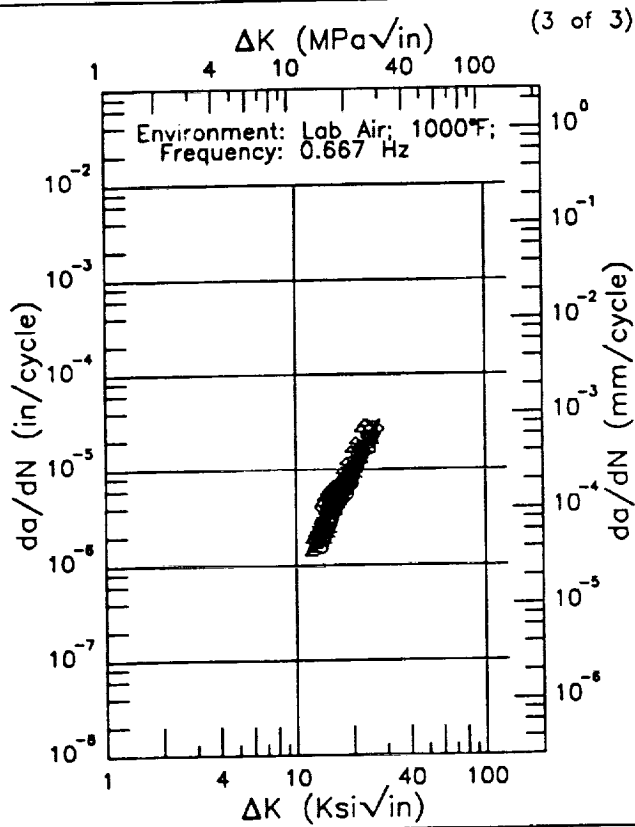


RMS %  
 Error  
 4.95



Condition/Ht: SOLUTION ANNEALED  
 Form: Plate  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.05

Yield Strength: 39.3 - 39.6 ksi  
 Ult. Strength: 77.1 - 90.8 ksi  
 Specimen Thk: 0.456 - 0.505 in.  
 Specimen Width: 1.996 - 2.008 in.  
 Ref: EPWS1;EPWHS

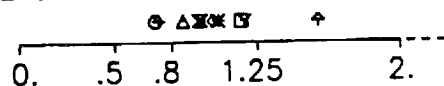


$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
12.02 (min)	1.46
13.	2.10
16.	4.42
20.	9.80
25.	23.0
26.92 (max)	27.0

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
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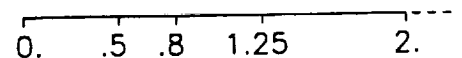
RMS %  
 Error  
 23.49

Life Prediction Ratio Summary



RMS %  
 Error

Life Prediction Ratio Summary





F 304

Condition/Ht: SOLUTION ANNEALED

Form: Plate

Specimen Type: CCP (max load specified)

Orientation: L-T

Stress Ratio: 0.

Environment: LAB AIR; RT

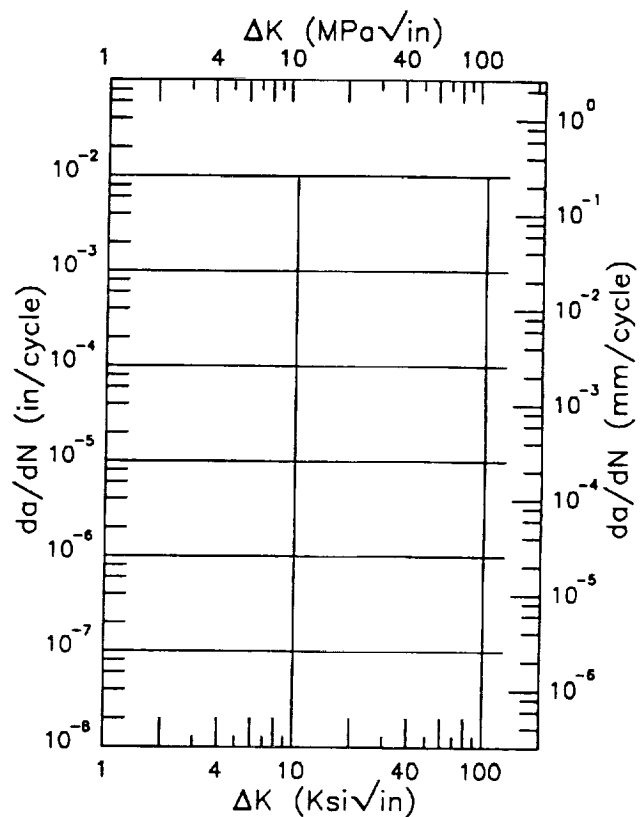
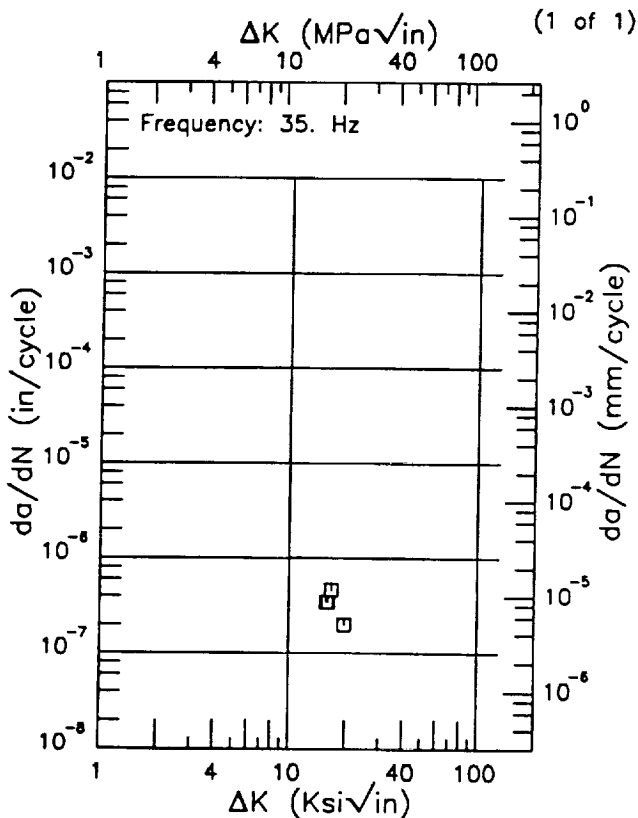
Yield Strength: 38.4 ksi

Ult. Strength: 89.6 ksi

Specimen Thk: 0.394 in.

Specimen Width: 7.874 in.

Ref: EPNRI



ΔK (Ksi√in) da/dN (10<sup>-6</sup>in/cycle)

ΔK (Ksi√in) da/dN (10<sup>-6</sup>in/cycle)

RMS %  
Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.---

RMS %  
Error

Life Prediction Ratio Summary

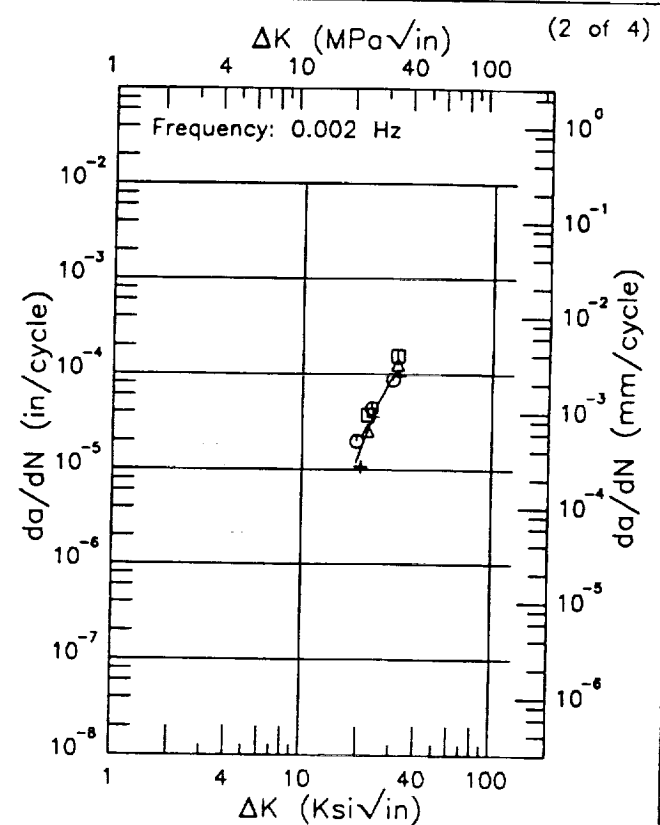
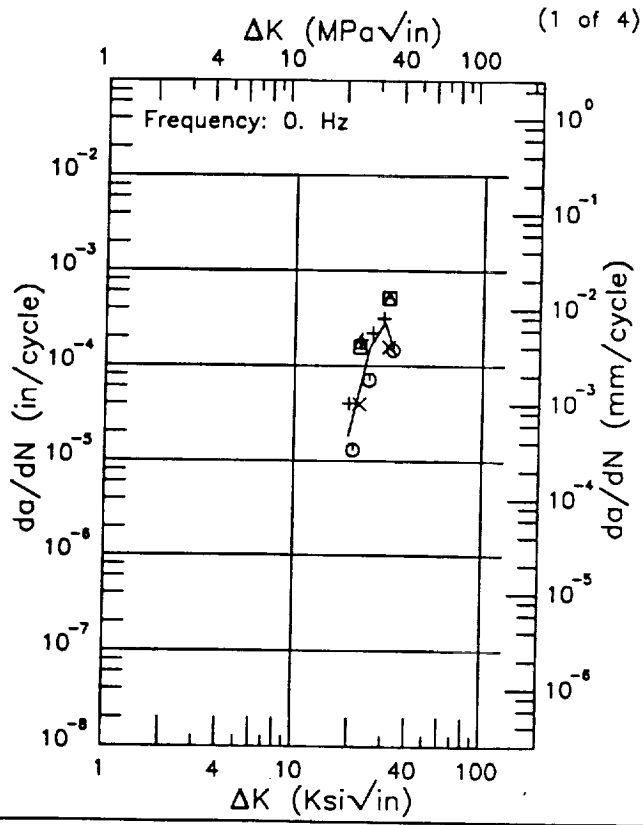
0. .5 .8 1.25 2.---

A1-42

F | 304 |

Condition/Ht: SOLUTION ANNEALED AT  
 Form: Plate  
 Specimen Type:  
 Orientation:  
 Stress Ratio: 0.1  
 Environment: BWR WATER;554°F

Yield Strength: 31.8 ksi  
 Ult. Strength: 92.5 ksi  
 Specimen Thk: 0.787 in.  
 Specimen Width: 1.575 in.  
 Ref: EPTCO



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
19.40 (min)	18.5
20.	23.5
25.	161.
30.	288.
32.90 (max)	169.

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
19.30 (min)	12.1
20.	14.7
25.	49.0
30.	96.5
32.20 (max)	109.

RMS % Error >100.0	Life Prediction Ratio Summary 0. .5 .8 1.25 2.---	RMS % Error 34.82	Life Prediction Ratio Summary 0. .5 .8 1.25 2.---
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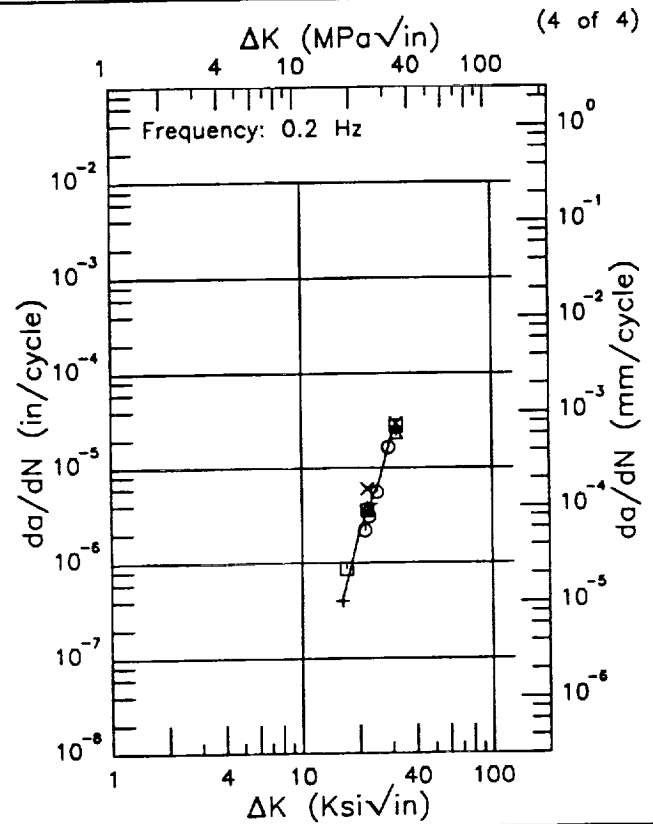
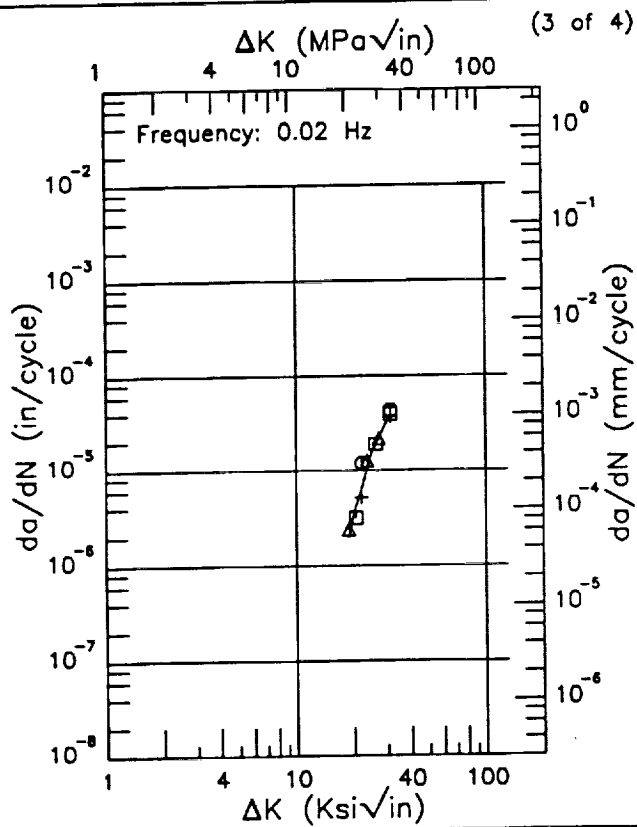
A1-43

PAGE 42 INTENTIONALLY BLANK

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Condition/Ht: SOLUTION ANNEALED AT  
 Form: Plate  
 Specimen Type:  
 Orientation:  
 Stress Ratio: 0.1  
 Environment: BWR WATER;554°F

Yield Strength: 31.8 ksi  
 Ult. Strength: 92.5 ksi  
 Specimen Thk: 0.787 in.  
 Specimen Width: 1.575 in.  
 Ref: EPTCO



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
18.80 (min)	2.00
20.	3.37
25.	15.7
30.	33.0
31.30 (max)	36.3

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
16.30 (min)	0.431
20.	2.11
25.	6.37
30.	22.8
31.30 (max)	29.6

RMS %  
 Error  
 29.63

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

RMS %  
 Error  
 26.09

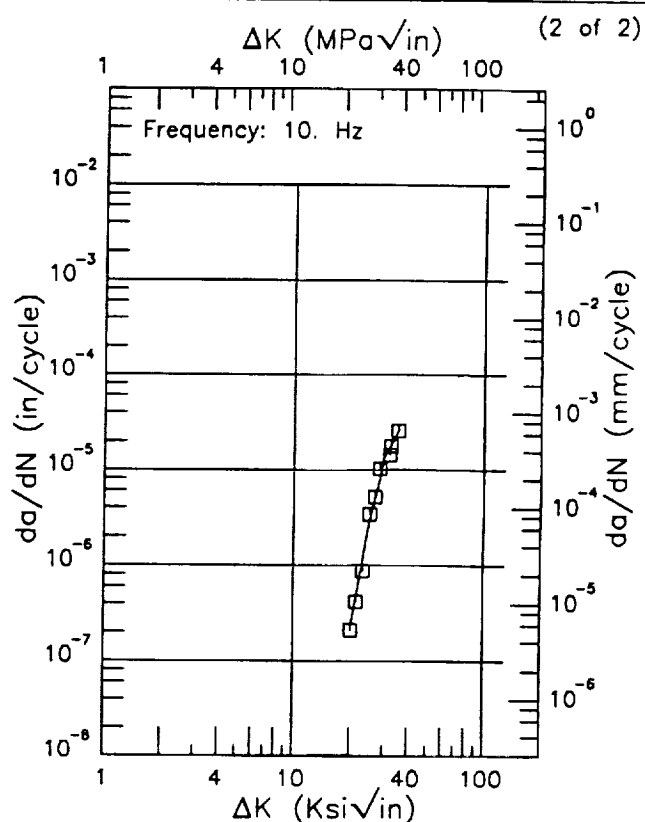
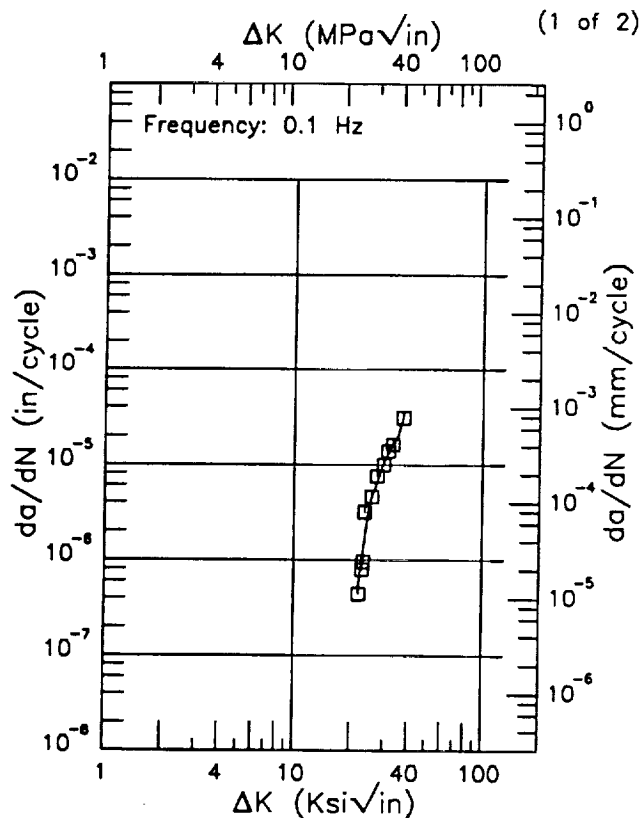
Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

F | 304 |

Condition/Ht: SOLUTION ANNEALED AT  
 Form: Plate  
 Specimen Type:  
 Orientation:  
 Stress Ratio: 0.1  
 Environment: LAB AIR;554°F

Yield Strength: 31.8 ksi  
 Ult. Strength: 92.5 ksi  
 Specimen Thk: 0.787 in.  
 Specimen Width: 1.575 in.  
 Ref: EPTCO



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
21.90 (min)	0.511
25.	3.83
30.	11.2
35.	19.7
37.60 (max)	31.6

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
20.00 (min)	0.223
25.	2.77
30.	13.9
35.	24.9
35.10 (max)	25.7

RMS %  
 Error  
 36.69

Life Prediction Ratio Summary

0. .5 .8 1.25 2.---

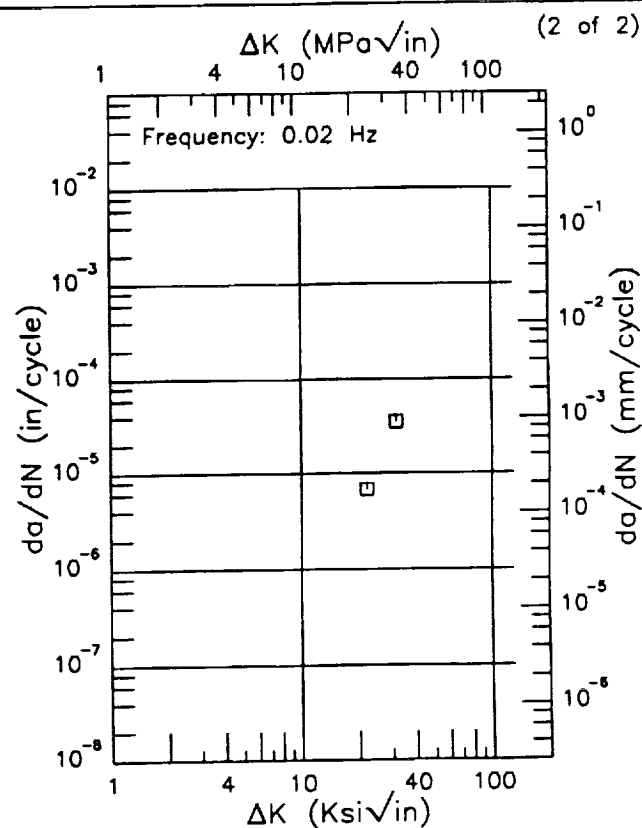
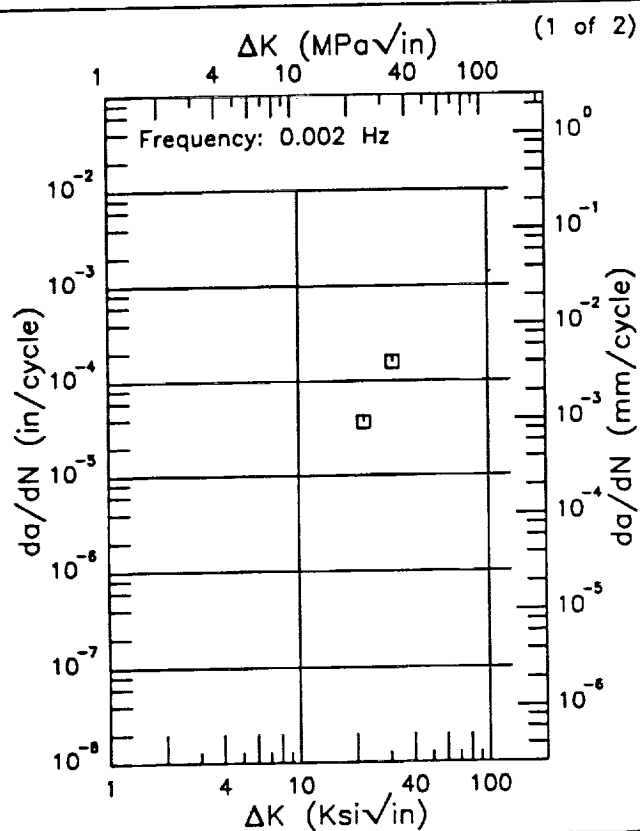
RMS %  
 Error  
 16.19

Life Prediction Ratio Summary

0. .5 .8 1.25 2.---

Condition/Ht: SOLUTION ANNEALED AT  
 Form: Plate  
 Specimen Type:  
 Orientation:  
 Stress Ratio: 0.1  
 Environment: PWR WATER;554°F

Yield Strength: 31.8 ksi  
 Ult. Strength: 92.5 ksi  
 Specimen Thk: 0.787 in.  
 Specimen Width: 1.575 in.  
 Ref: EPTC0



$\Delta K$  (Ksi $\sqrt{\text{in}}$ )       $da/dN$  ( $10^{-6}$  in/cycle)

$\Delta K$  (Ksi $\sqrt{\text{in}}$ )       $da/dN$  ( $10^{-6}$  in/cycle)

RMS %  
Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.---

RMS %  
Error

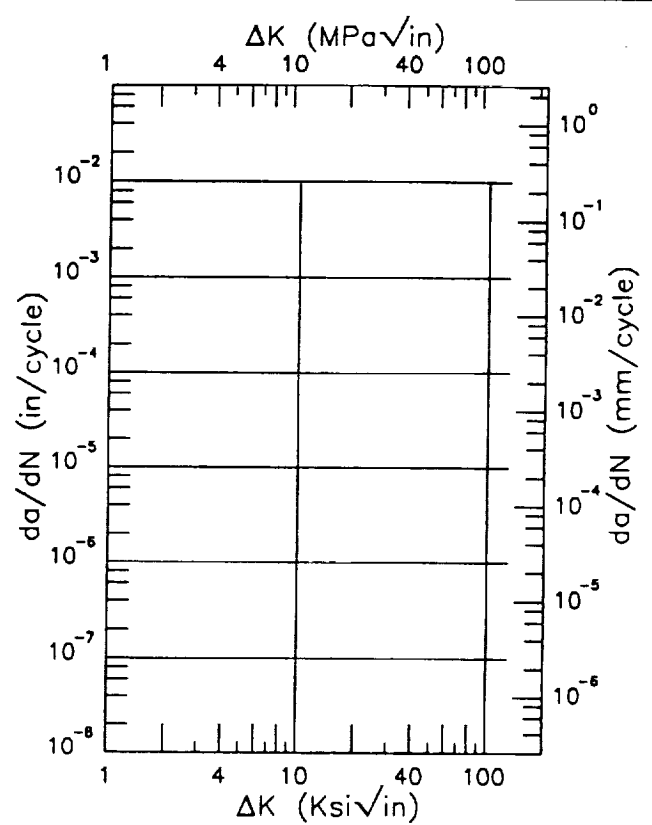
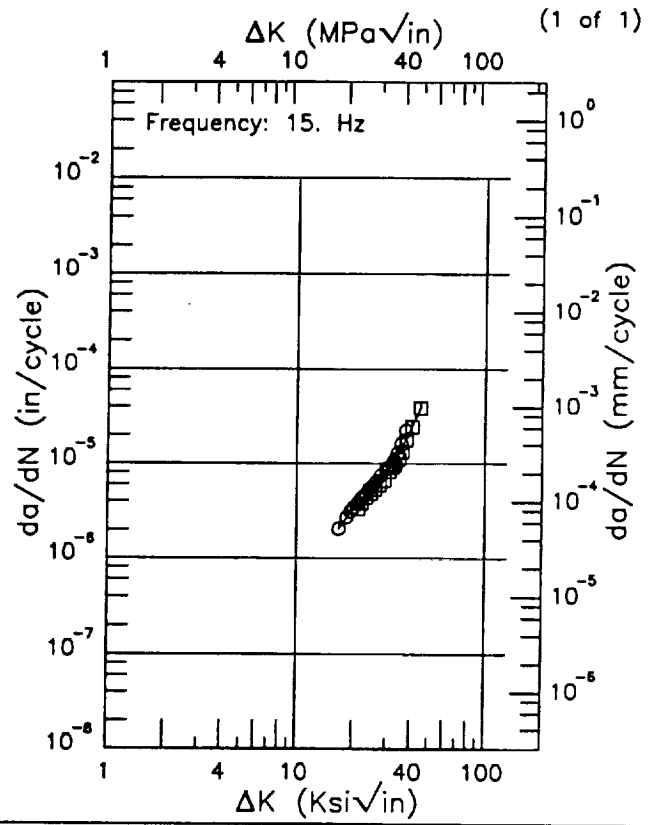
Life Prediction Ratio Summary

0. .5 .8 1.25 2.---

F | 304 |

Condition/Ht: SOLUTION TREATMENT  
 Form: Plate  
 Specimen Type: CCP (max load specified)  
 Orientation:  
 Stress Ratio: 0.  
 Environment: LAB AIR; RT

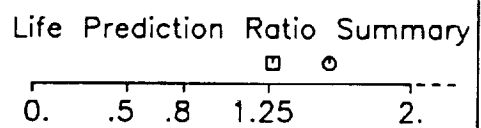
Yield Strength: 38.4 ksi  
 Ult. Strength: 89.6 ksi  
 Specimen Thk: 0.472 in.  
 Specimen Width: 5.118 in.  
 Ref: EPNSC



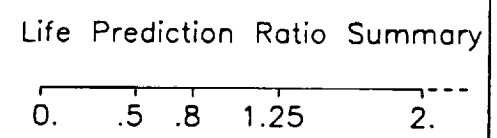
$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
16.62 (min)	2.03
20.	3.34
25.	5.31
30.	8.05
35.	13.1
40.	23.3
44.71 (max)	37.8

$\Delta K$  (Ksi $\sqrt{\text{in}}$ )       $da/dN$  ( $10^{-6}$  in/cycle)

RMS %  
 Error  
 9.04

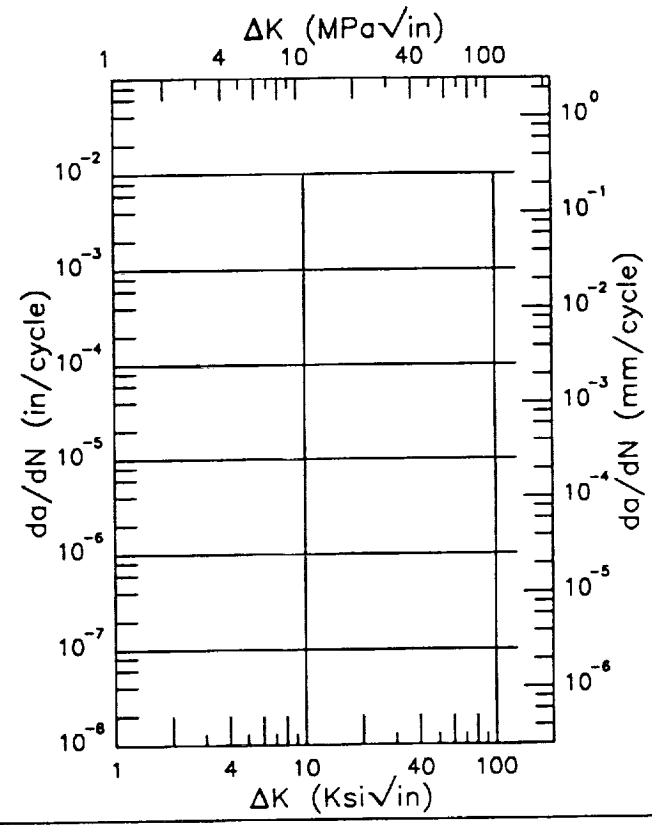
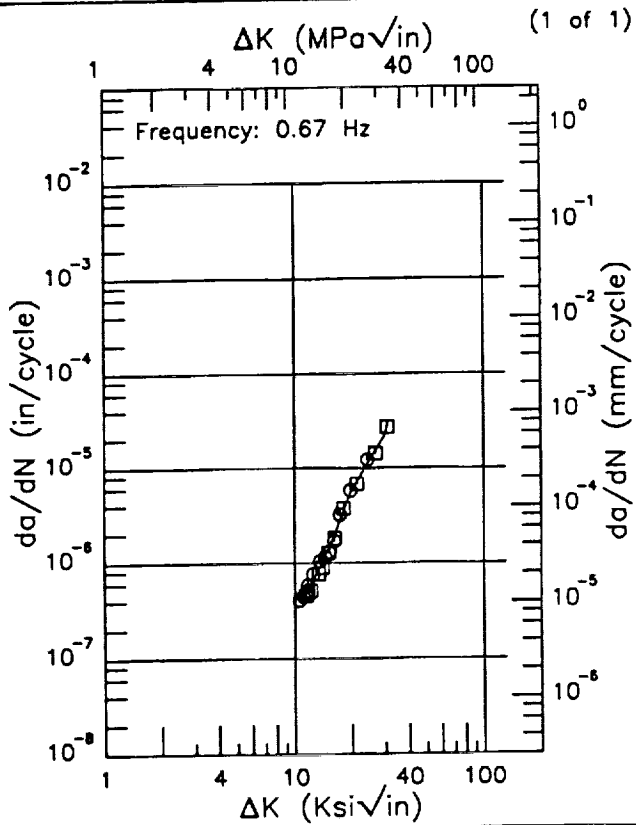


RMS %  
 Error



Condition/Ht: WELDED  
 Form:  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.05  
 Environment: LAB AIR;601°F

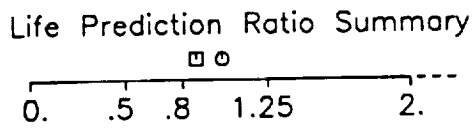
Yield Strength:  
 Ult. Strength:  
 Specimen Thk: 0.298 - 0.299 in.  
 Specimen Width: 1.152 - 1.153 in.  
 Ref: EPJAM



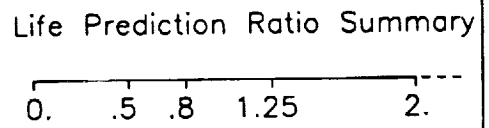
$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
10.53 (min)	0.397
13.	0.754
16.	1.84
20.	5.86
25.	12.5
30.	21.8
30.79 (max)	26.7

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
--------------------------------------	-------------------------------

RMS %  
 Error  
 10.08



RMS %  
 Error

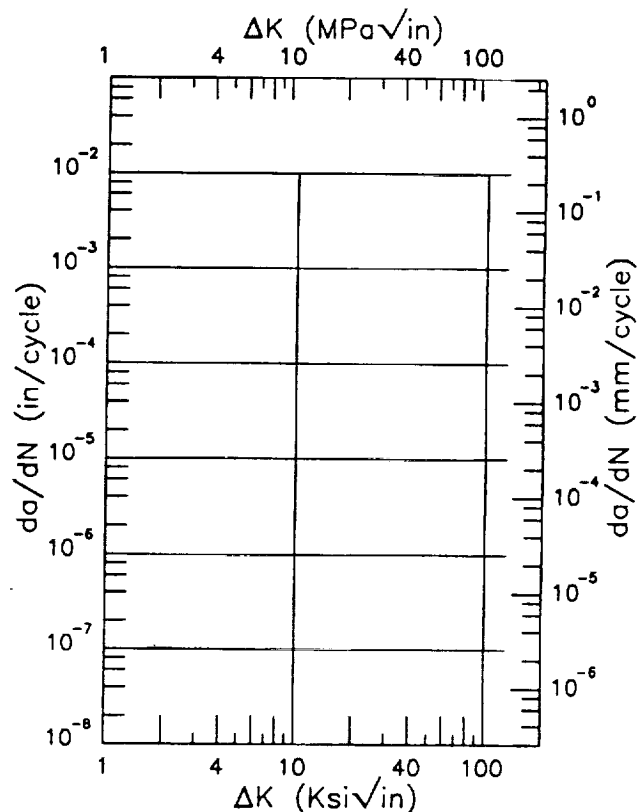
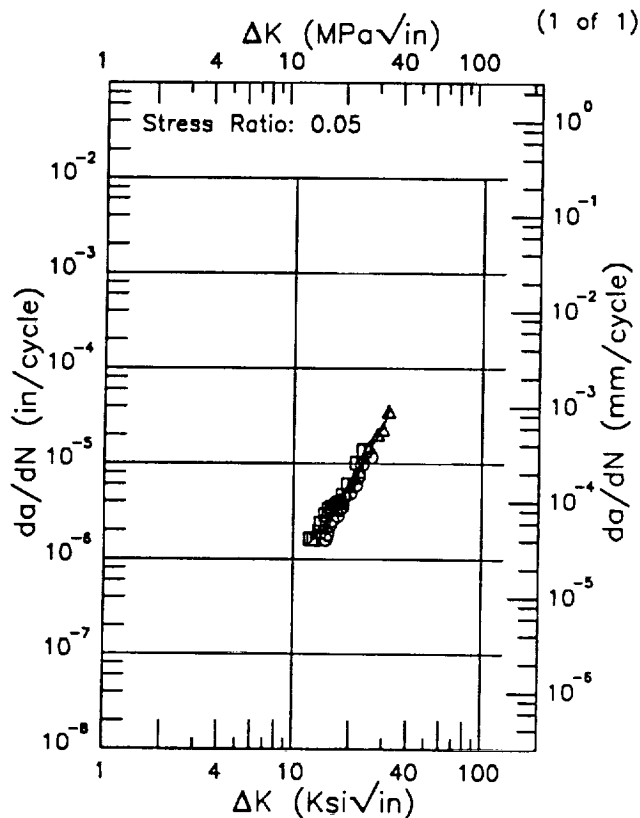




R | 304 |

Condition/Ht: -99  
Form: Plate  
Specimen Type: CT  
Orientation:  
Frequency: 0.7 Hz  
Environment: LAB AIR;1000°F

Yield Strength: 37. - 39.6 ksi  
Ult. Strength: 82.5 - 82.7 ksi  
Specimen Thk: 0.421 - 0.491 in.  
Specimen Width: 2.001 - 2.005 in.  
Ref: EPWS1



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
12.26 (min)	1.49
13.	1.77
16.	2.98
20.	5.90
25.	13.6
30.	26.3
31.52 (max)	35.2

ΔK (Ksi√in) da/dN (10<sup>-6</sup>in/cycle)

RMS %  
Error  
16.87

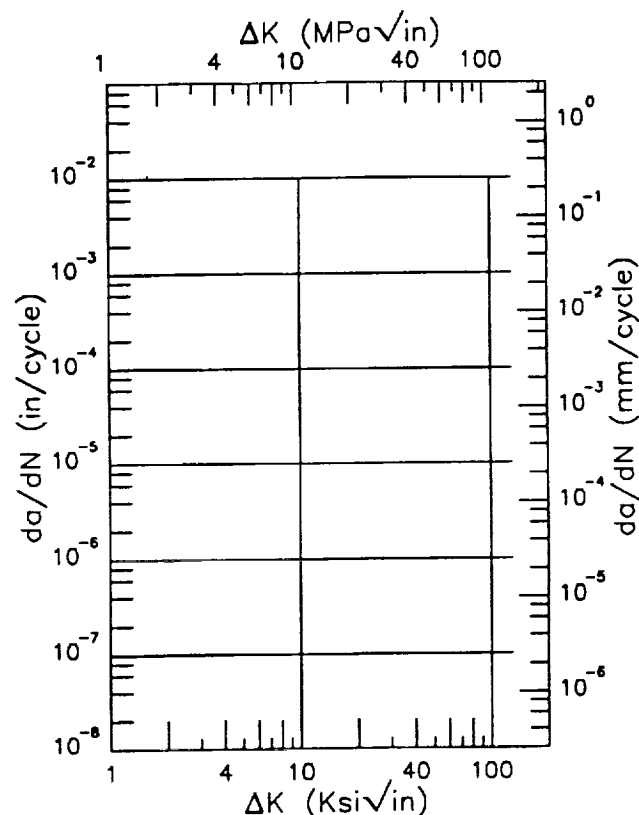
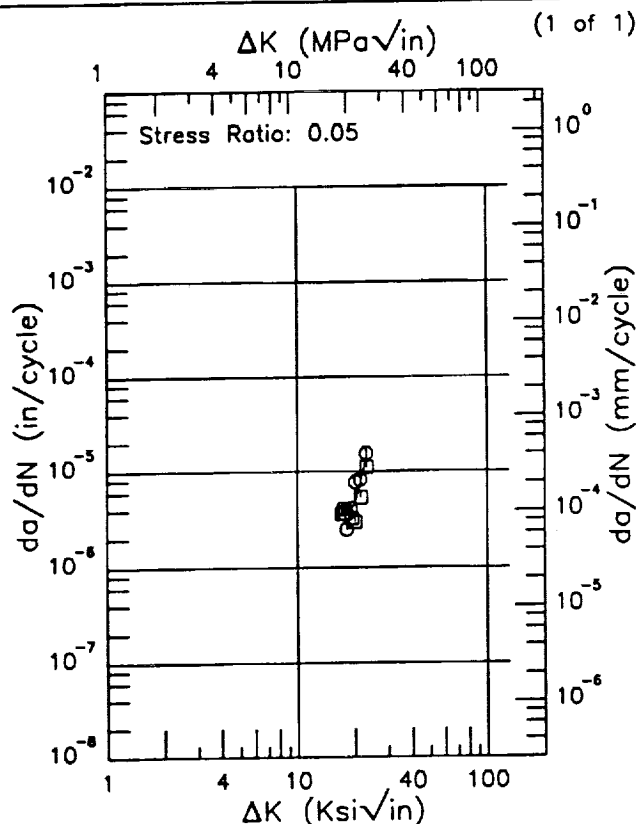
Life Prediction Ratio Summary  
0 0.5 0.8 1.25 2.---

RMS %  
Error

Life Prediction Ratio Summary  
0. .5 .8 1.25 2.---

Condition/Ht: -99  
Form: Plate  
Specimen Type: CT  
Orientation:  
Frequency: 0.7 Hz  
Environment: LAB AIR;1000°F

Yield Strength: 39.4 ksi  
Ult. Strength: 77.1 ksi  
Specimen Thk: 0.521 - 0.522 in.  
Specimen Width: 1.498 - 1.499 in.  
Ref: EPWS1



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
17.04 (min)	3.63
20.	4.51
23.06 (max)	15.0

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
17.04 (min)	3.63
20.	4.51
23.06 (max)	15.0

RMS %  
Error  
27.59

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS %  
Error

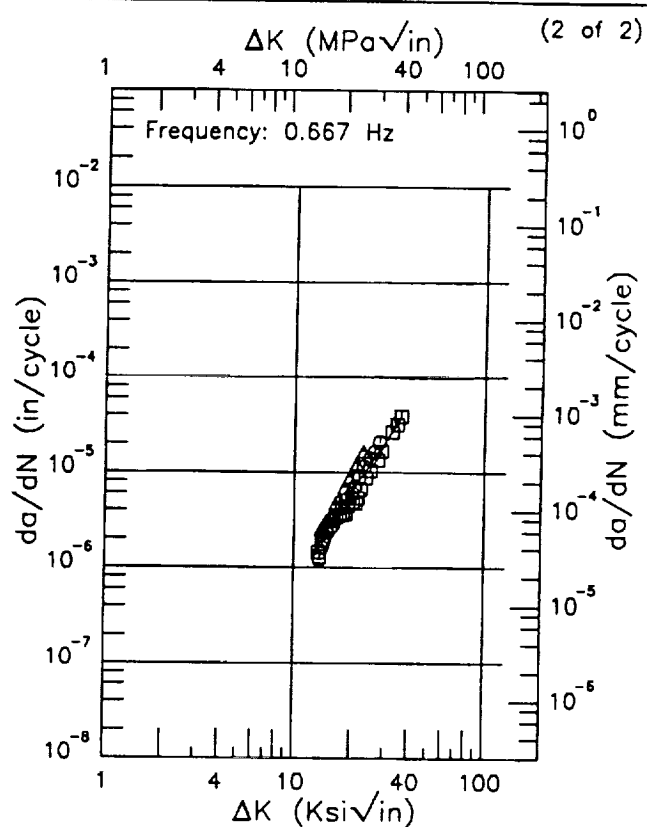
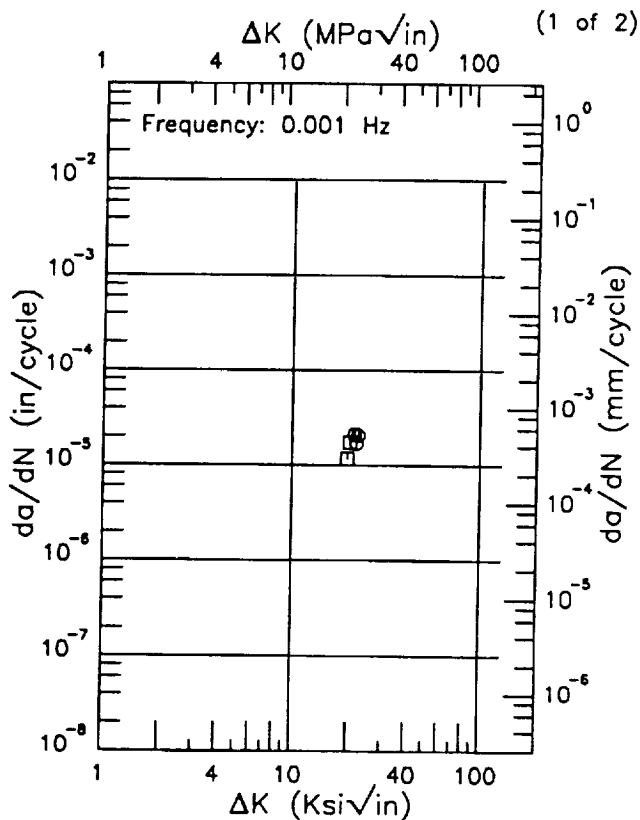
Life Prediction Ratio Summary

0. .5 .8 1.25 2.

F | 304 |

Condition/Ht: -99  
 Form: Plate  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.05  
 Environment: LAB AIR;1000°F

Yield Strength: 39.6 - 57. ksi  
 Ult. Strength: 77. - 82.9 ksi  
 Specimen Thk: 0.485 - 0.494 in.  
 Specimen Width: 2 - 2.006 in.  
 Ref: EPWS1



ΔK (Ksi√in) da/dN (10<sup>-6</sup>in/cycle)

ΔK (Ksi√in) da/dN (10<sup>-6</sup>in/cycle)

13.48 (min)	1.70
16.	3.15
20.	6.31
25.	12.0
30.	20.5
35.	33.6
36.11 (max)	37.4

RMS %  
Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

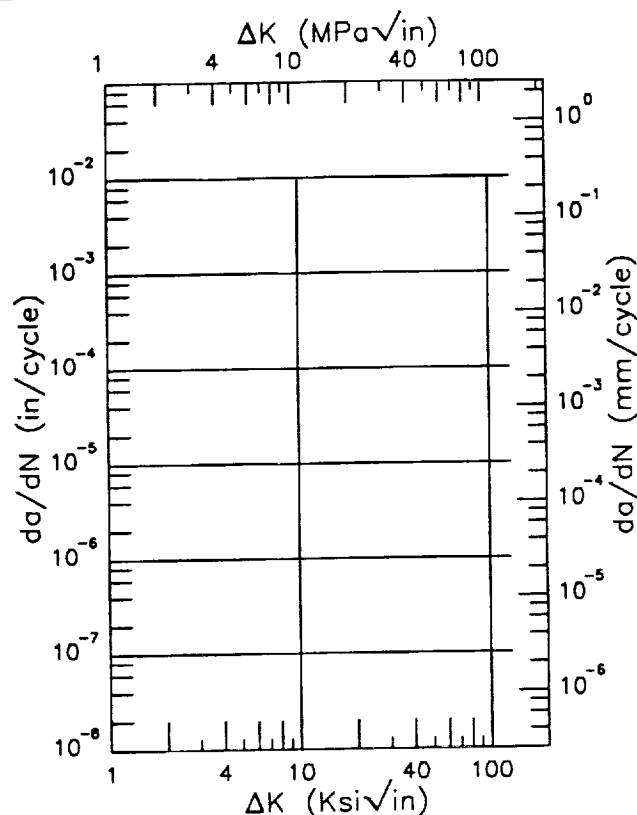
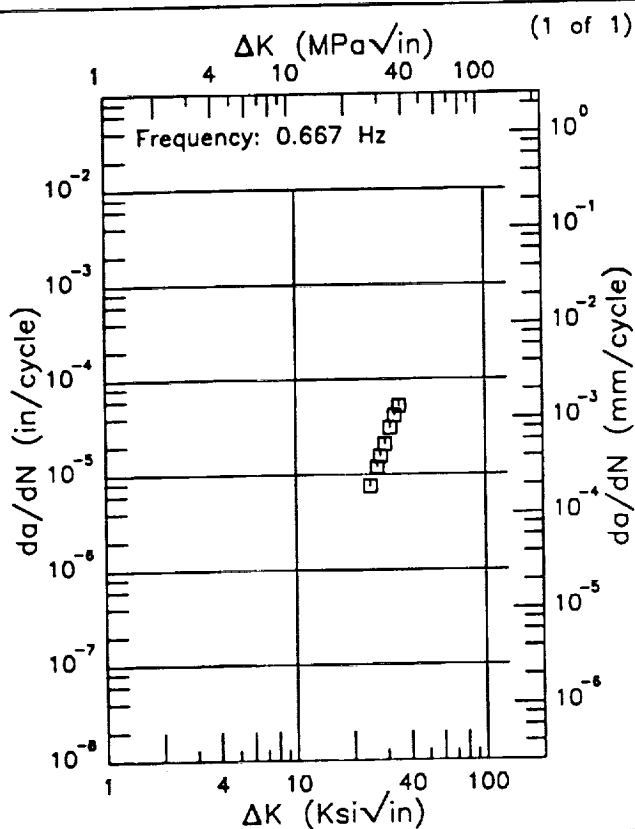
RMS %  
Error  
25.69

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

Condition/Ht: -99  
 Form: Plate  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.05  
 Environment: LAB AIR;800°F

Yield Strength: 39.6 ksi  
 Ult. Strength: 76.1 ksi  
 Specimen Thk: 0.36 in.  
 Specimen Width: 2.998 in.  
 Ref: EPWHS



$\Delta K$  (Ksi√in)       $da/dN$  ( $10^{-6}$  in/cycle)

$\Delta K$  (Ksi√in)       $da/dN$  ( $10^{-6}$  in/cycle)

RMS %  
Error

Life Prediction Ratio Summary

0.    .5    .8    1.25    2. ---

RMS %  
Error

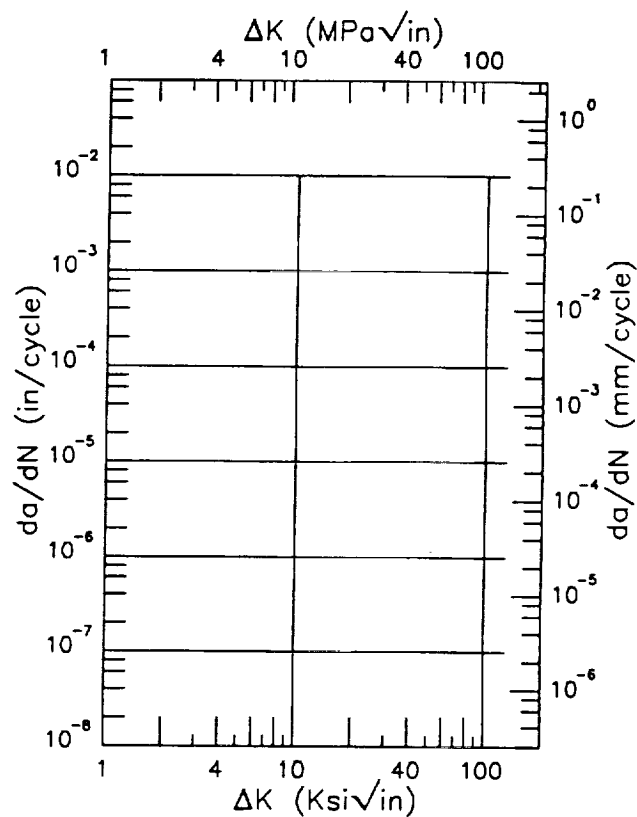
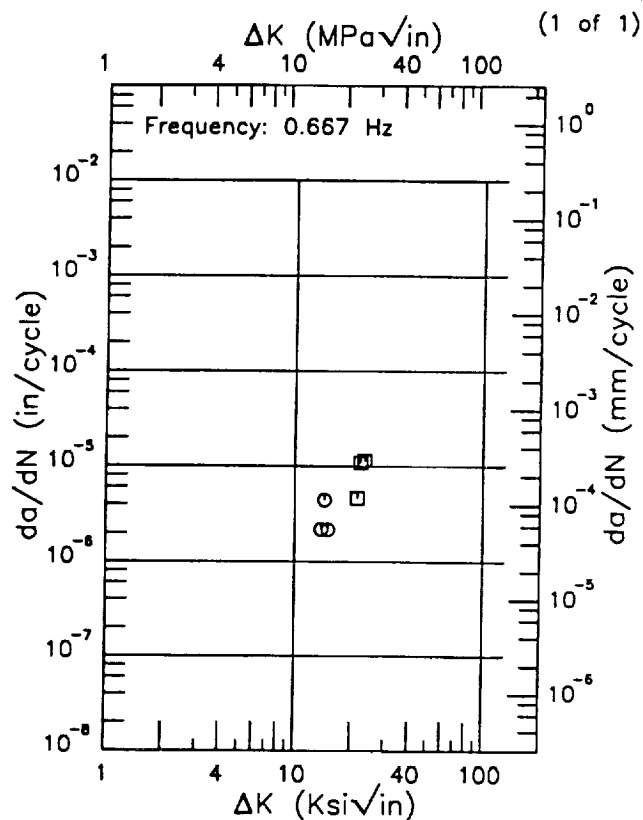
Life Prediction Ratio Summary

0.    .5    .8    1.25    2. ---

F | 304 |

Condition/Ht: -99  
 Form: Plate  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.05  
 Environment: LAB AIR;800°F

Yield Strength: 39.6 ksi  
 Ult. Strength: 76.1 ksi  
 Specimen Thk: 0.3 in.  
 Specimen Width: 1.157 in.  
 Ref: EPWHS



$\Delta K$  (Ksi√in)       $da/dN$  ( $10^{-6}$  in/cycle)

$\Delta K$  (Ksi√in)       $da/dN$  ( $10^{-6}$  in/cycle)

RMS %  
Error

Life Prediction Ratio Summary

0.   .5   .8   1.25   2. ---

RMS %  
Error

Life Prediction Ratio Summary

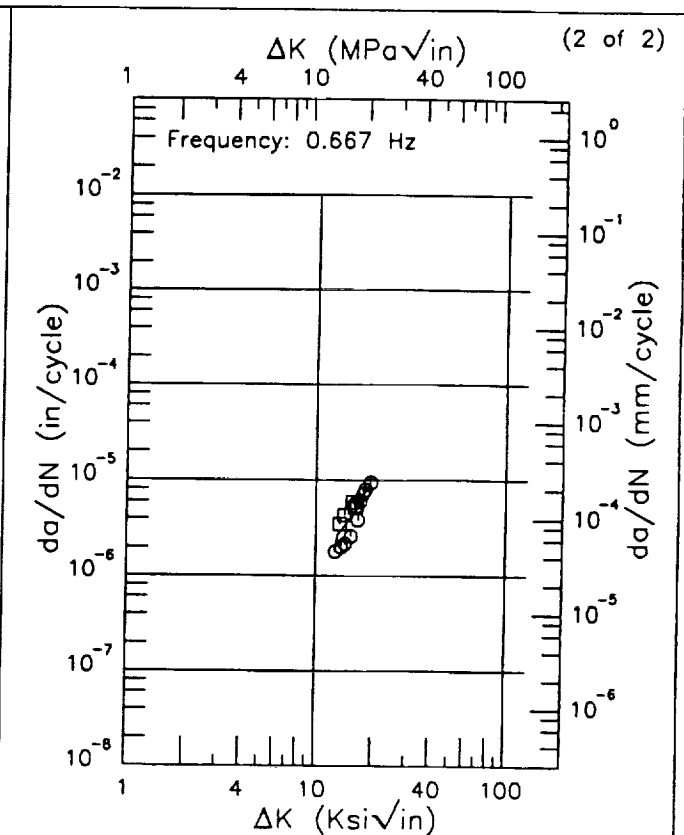
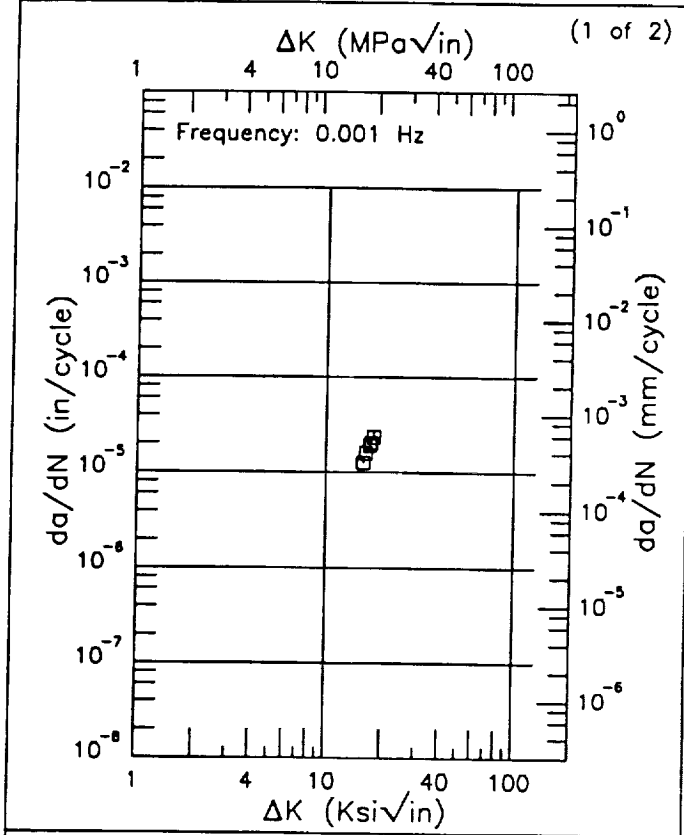
0.   .5   .8   1.25   2. ---

A1-54

F | 304 |

Condition/Ht: -99  
 Form: Plate  
 Specimen Type: CCP (max load specified)  
 Orientation:  
 Stress Ratio: 0.05  
 Environment: LAB AIR;1000°F

Yield Strength: 39.6 ksi  
 Ult. Strength: 77. ksi  
 Specimen Thk: 0.12 in.  
 Specimen Width: 1.472 in.  
 Ref: EPWHS



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
12.64 (min)	1.82
13.	2.66
16.	4.66
19.28 (max)	9.30

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
12.64 (min)	1.82
13.	2.66
16.	4.66
19.28 (max)	9.30

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.---

RMS % Error	Life Prediction Ratio Summary
23.59	0. .5 .8 1.25 2.---

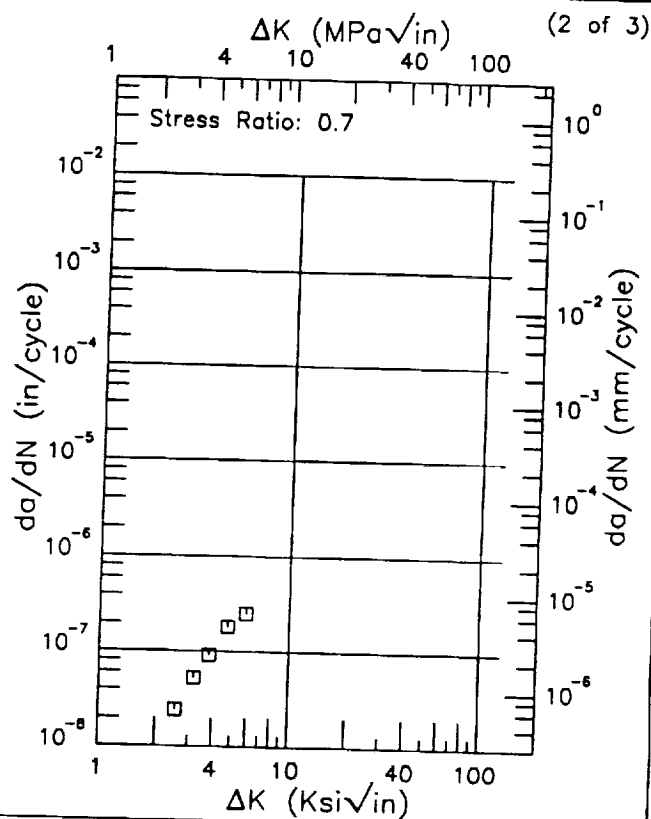
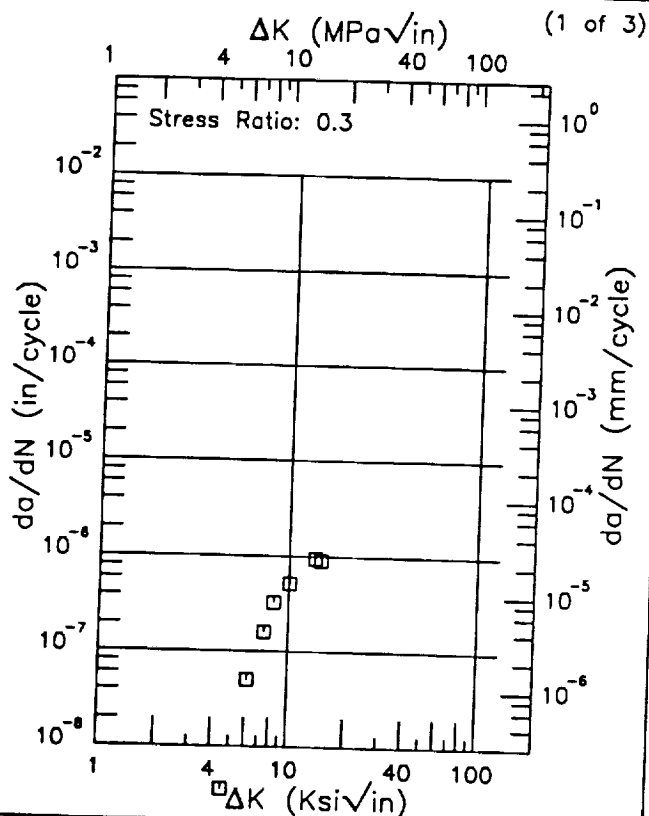
A1-56



R 304

Condition/Ht: -99  
 Form:  
 Specimen Type: CT  
 Orientation:  
 Frequency: 10 Hz  
 Environment: BWR WATER;203°F

Yield Strength:  
 Ult. Strength:  
 Specimen Thk:  
 Specimen Width:  
 Ref: EPGES



$\Delta K$  (Ksi√in)       $da/dN$  ( $10^{-6}$  in/cycle)

$\Delta K$  (Ksi√in)       $da/dN$  ( $10^{-6}$  in/cycle)

RMS %  
Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

RMS %  
Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

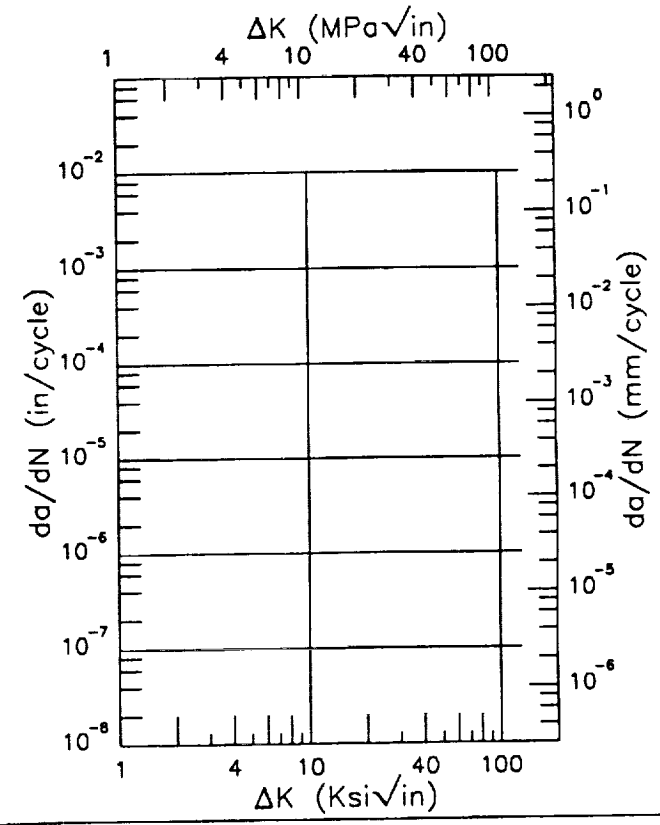
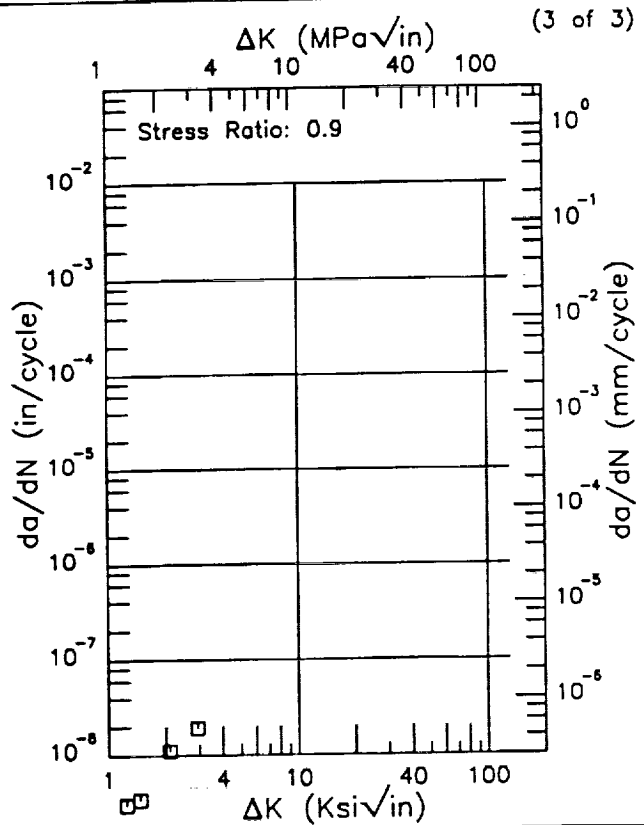
A1-57

PAGE 56 INTENTIONALLY BLANK

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Condition/Ht: -99  
 Form:  
 Specimen Type: CT  
 Orientation:  
 Frequency: 10 Hz  
 Environment: BWR WATER;203°F

Yield Strength:  
 Ult. Strength:  
 Specimen Thk:  
 Specimen Width:  
 Ref: EPGES

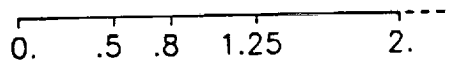


$\Delta K$  (Ksi√in)       $da/dN$  ( $10^{-6}$  in/cycle)

$\Delta K$  (Ksi√in)       $da/dN$  ( $10^{-6}$  in/cycle)

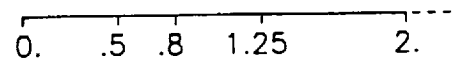
RMS %  
Error

Life Prediction Ratio Summary



RMS %  
Error

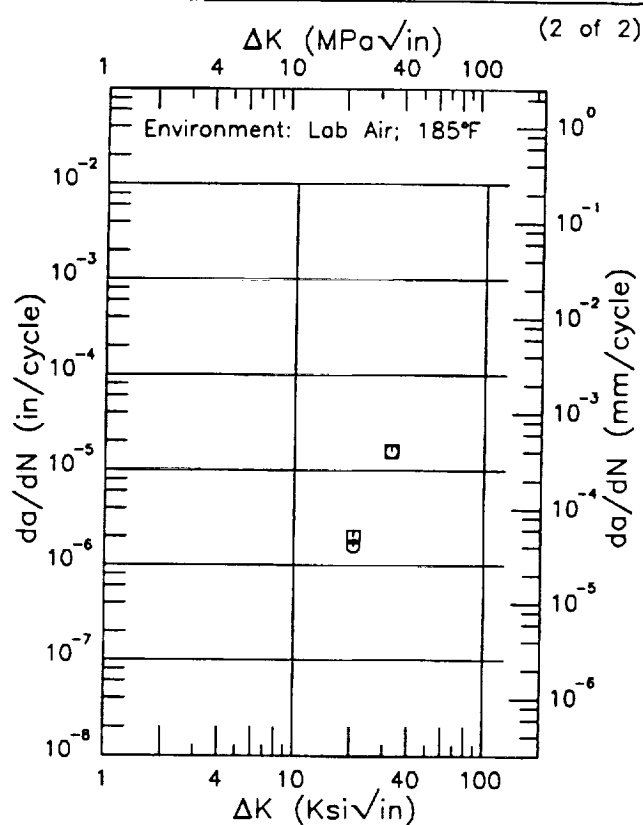
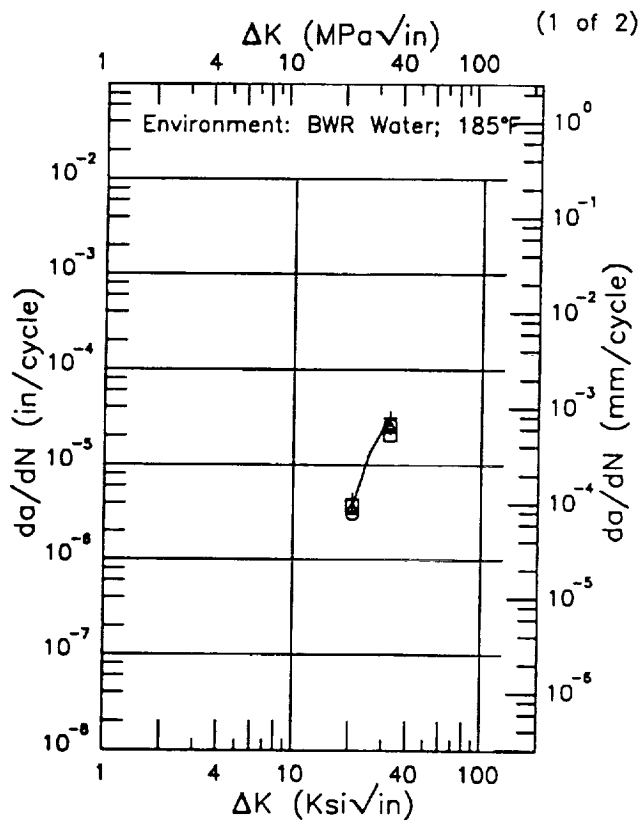
Life Prediction Ratio Summary



E | 304 |

Condition/Ht: -99  
 Form:  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.  
 Frequency: 0. Hz

Yield Strength:  
 Ult. Strength:  
 Specimen Thk:  
 Specimen Width:  
 Ref: EPSCO



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
20.50 (min)	3.74
25.	12.9
30.	24.8
32.30 (max)	30.7

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
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RMS %  
 Error  
 16.80

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

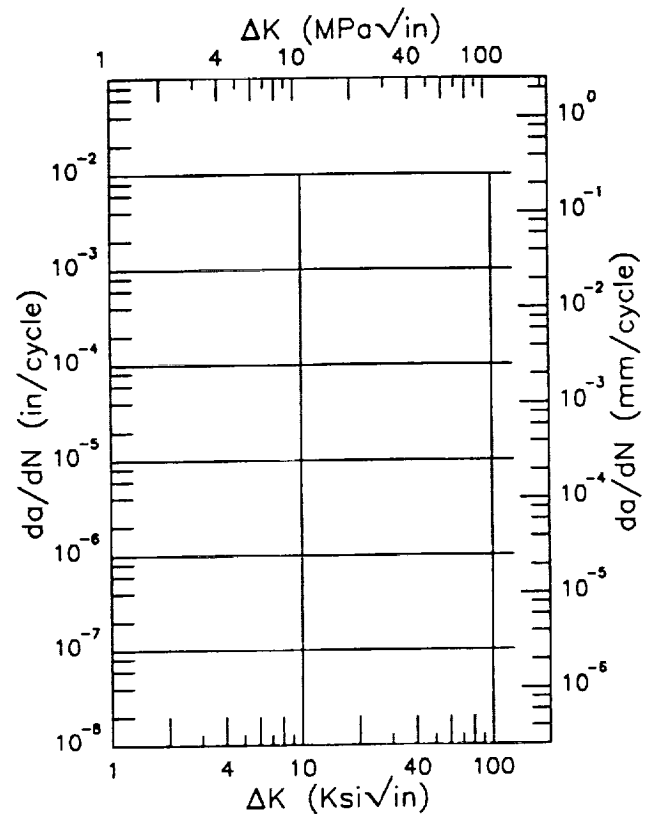
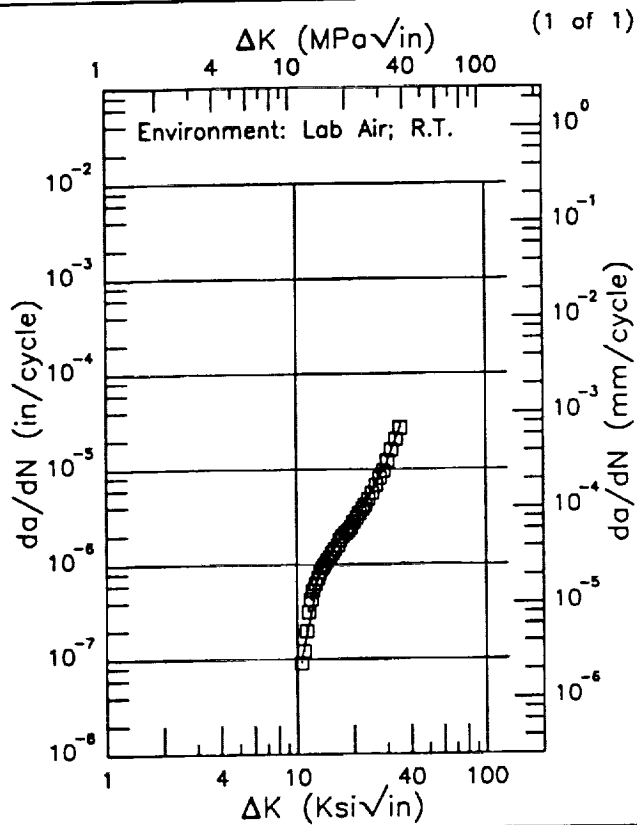
RMS %  
 Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

Condition/Ht: -99  
 Form:  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.05  
 Frequency: 0.2 Hz

Yield Strength:  
 Ult. Strength:  
 Specimen Thk: 0.5 in.  
 Specimen Width: 1.998 in.  
 Ref: EPJAM

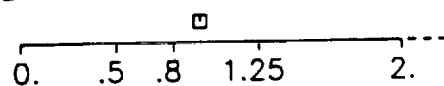


$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
10.54 (min)	0.0999
13.	0.744
16.	1.58
20.	2.62
25.	5.79
30.	11.9
35.	27.5
35.11 (max)	28.1

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
--------------------------------------	-------------------------------

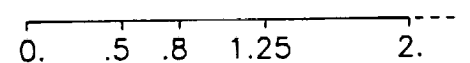
RMS %  
 Error  
 14.29

Life Prediction Ratio Summary



RMS %  
 Error

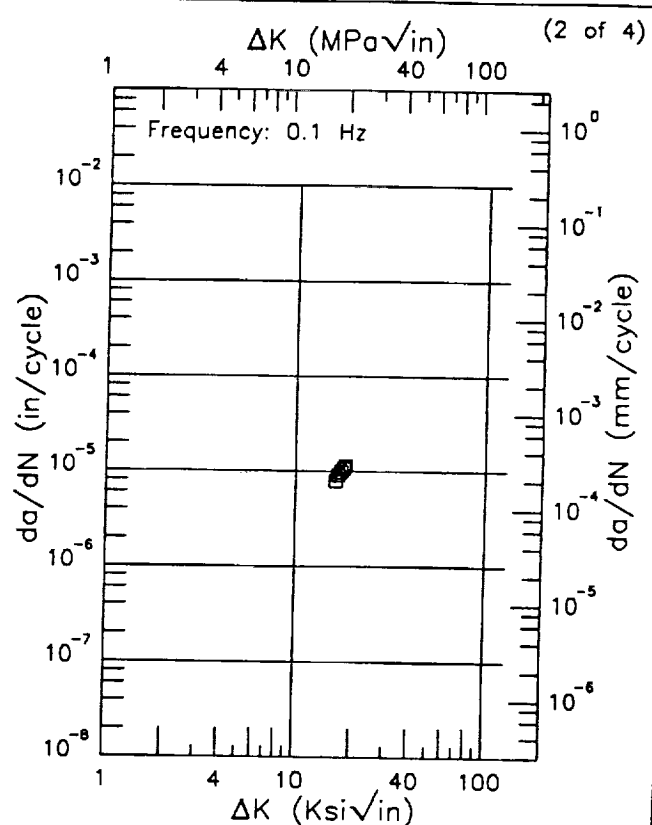
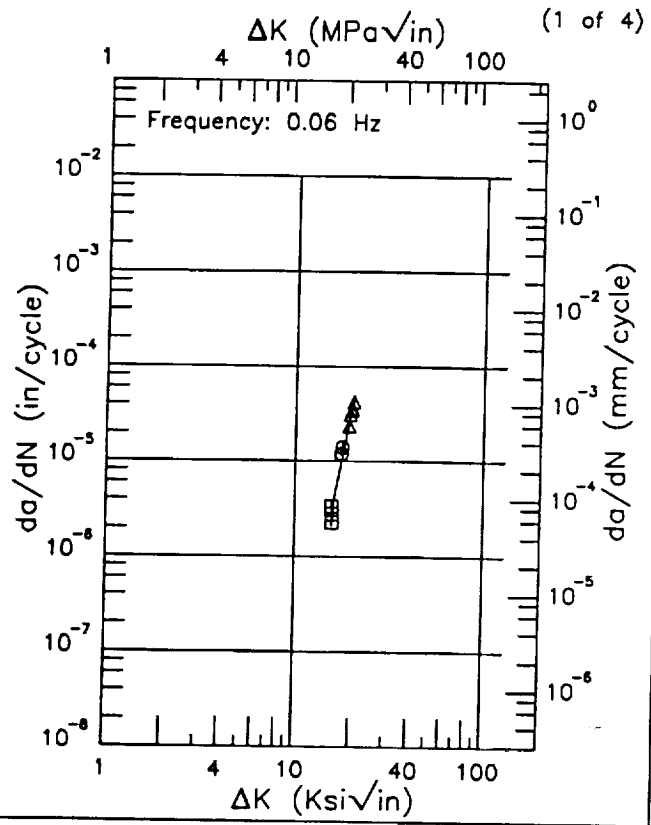
Life Prediction Ratio Summary



F | 304 |

Condition/Ht: -99  
 Form:  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.05  
 Environment: LAB AIR;1100°F

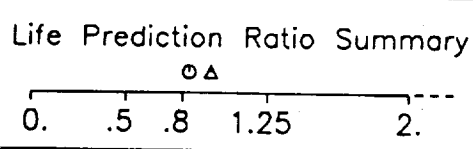
Yield Strength:  
 Ult. Strength:  
 Specimen Thk: 0.496 in.  
 Specimen Width: 2 in.  
 Ref: EPRAS



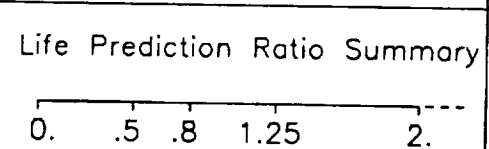
ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
15.58 (min)	2.13
16.	3.87
20.	38.4
20.19 (max)	43.3

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
-------------	-----------------------------------

RMS %  
 Error  
 24.53



RMS %  
 Error



Condition/Ht: -99

Form:

Specimen Type: CT

Orientation:

Stress Ratio: 0.05

Environment: LAB AIR; 1100°F

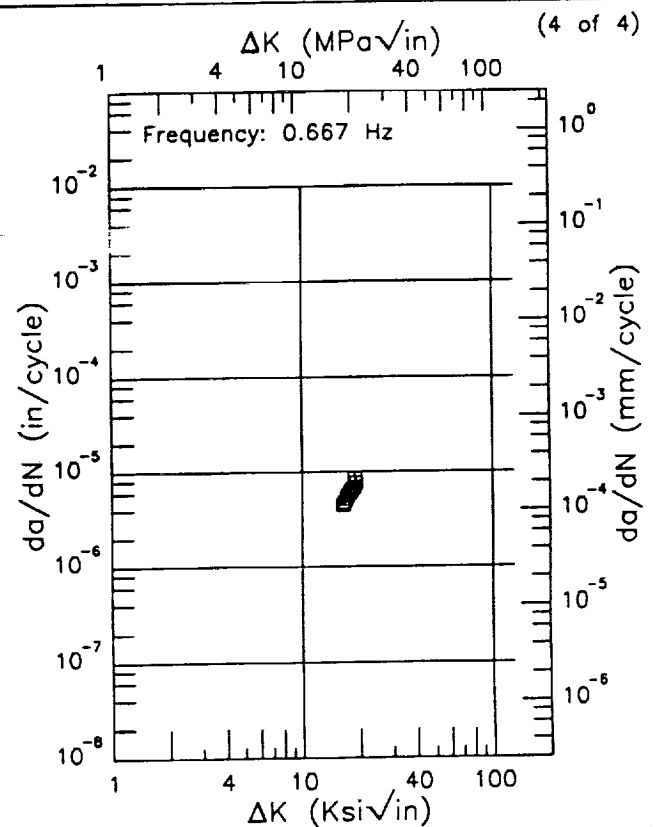
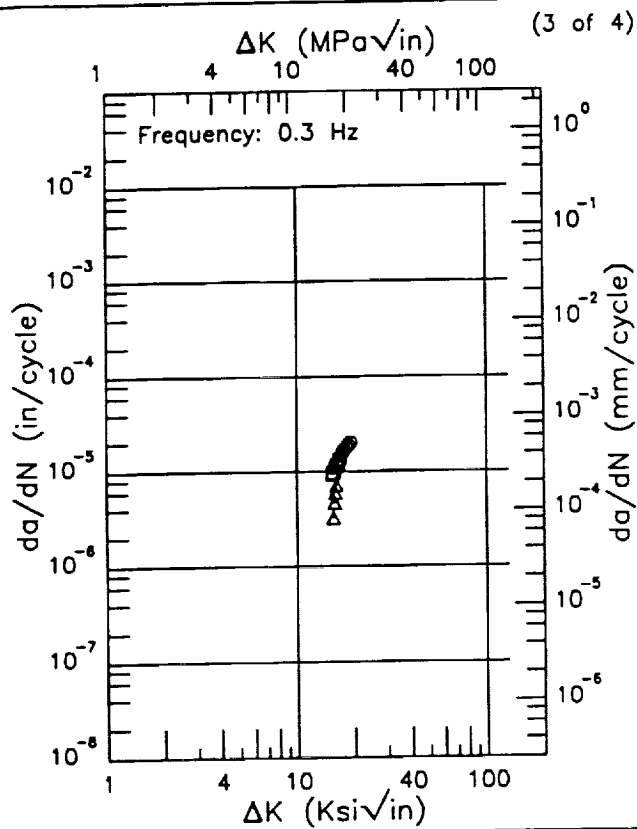
Yield Strength:

Ult. Strength:

Specimen Thk: 0.496 in.

Specimen Width: 2 in.

Ref: EPRAS

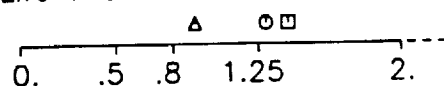


$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
15.34 (min)	5.47
16.	8.39
19.08 (max)	19.9

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
16.38 (min)	4.47
19.22 (max)	8.20

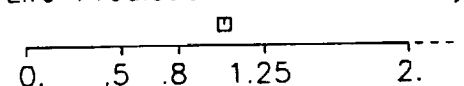
RMS %  
Error  
32.29

Life Prediction Ratio Summary



RMS %  
Error  
4.42

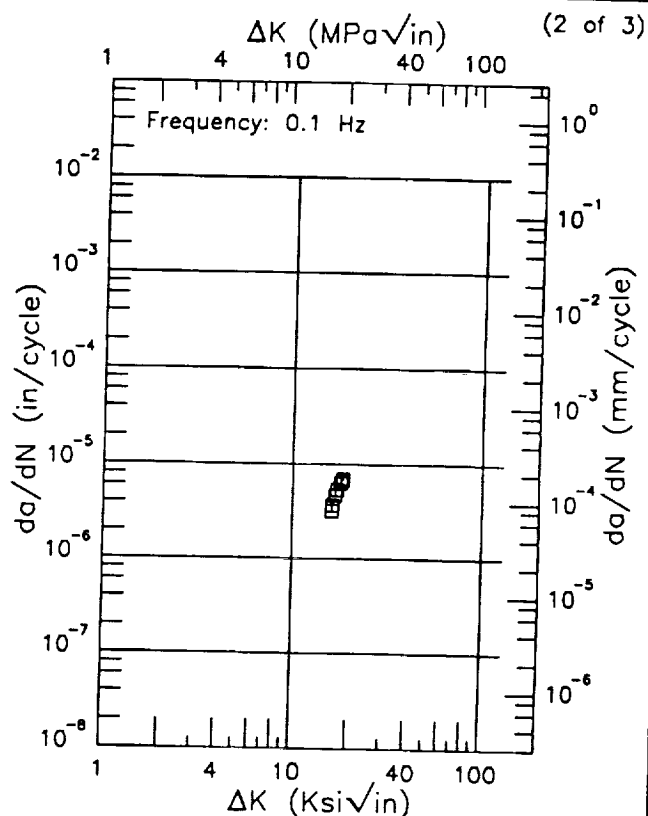
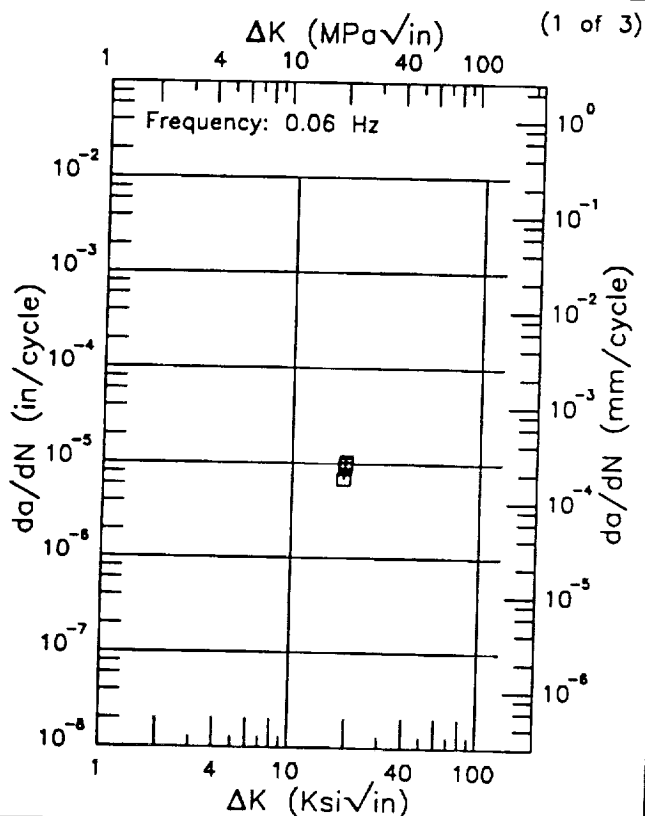
Life Prediction Ratio Summary



F 304

Condition/Ht: -99  
 Form:  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.05  
 Environment: LAB AIR;900°F

Yield Strength:  
 Ult. Strength:  
 Specimen Thk: 0.496 in.  
 Specimen Width: 2 in.  
 Ref: EPRAS



ΔK (Ksi√in)      da/dN (10<sup>-6</sup>in/cycle)

ΔK (Ksi√in)      da/dN (10<sup>-6</sup>in/cycle)

RMS %  
Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.---

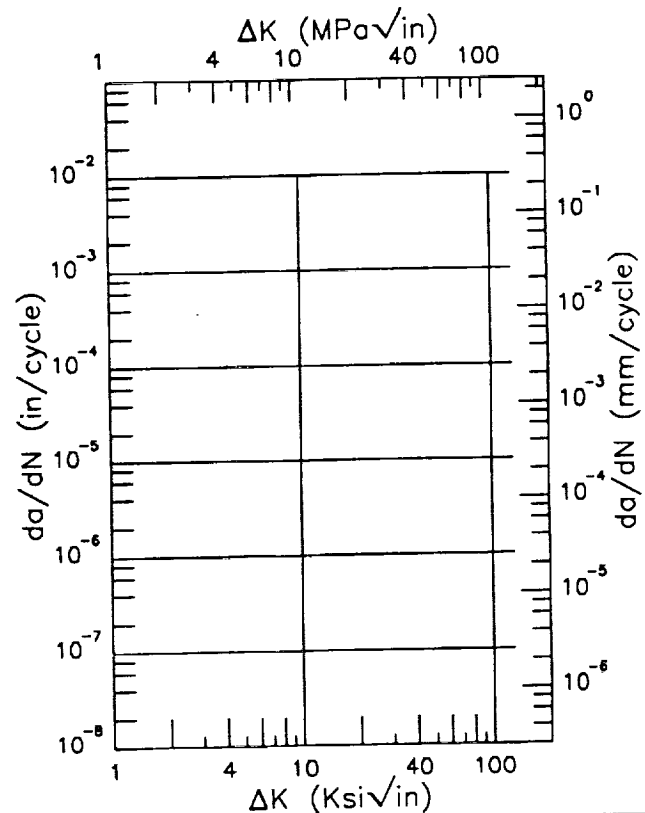
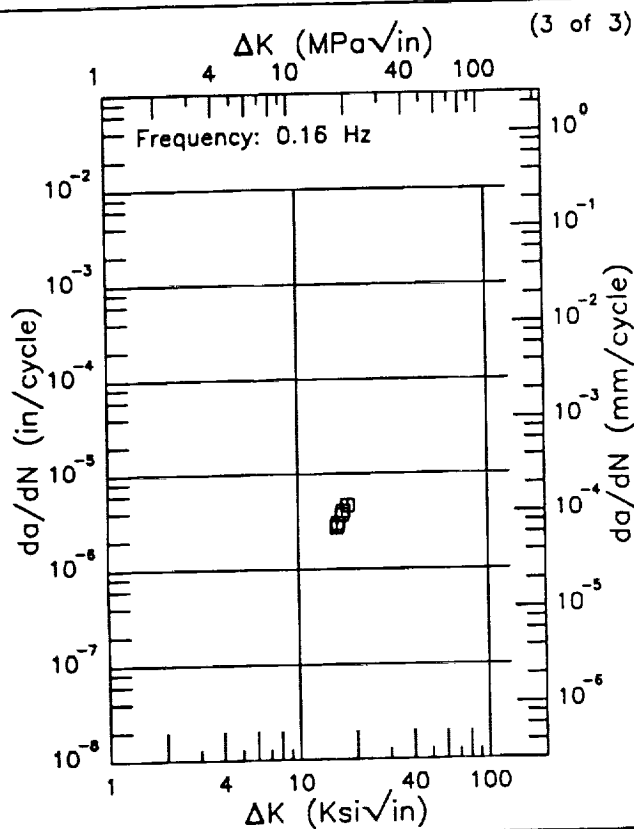
RMS %  
Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.---

Condition/Ht: -99  
 Form:  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.05  
 Environment: LAB AIR;900°F

Yield Strength:  
 Ult. Strength:  
 Specimen Thk: 0.496 in.  
 Specimen Width: 2 in.  
 Ref: EPRAS



$\Delta K$  (Ksi√in)       $da/dN$  ( $10^{-6}$  in/cycle)

$\Delta K$  (Ksi√in)       $da/dN$  ( $10^{-6}$  in/cycle)

RMS %  
Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

RMS %  
Error

Life Prediction Ratio Summary

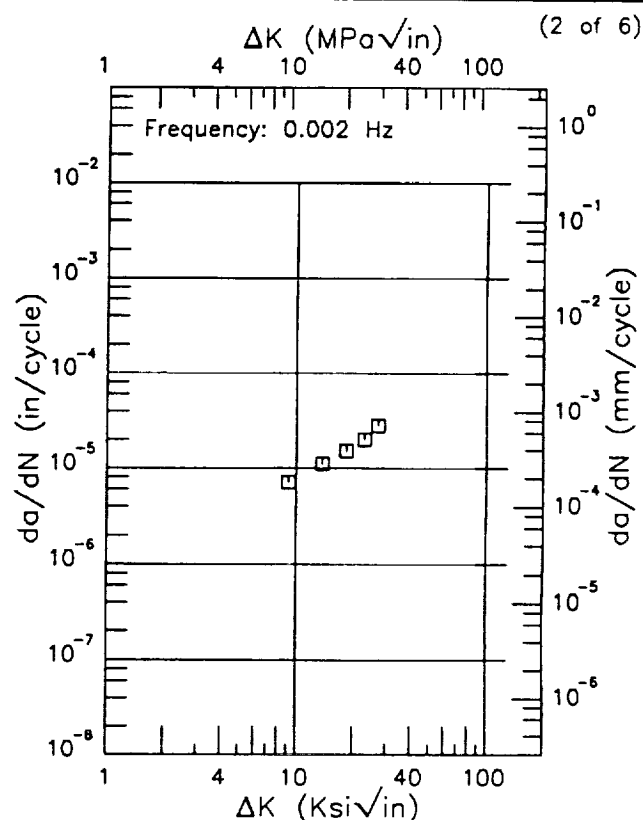
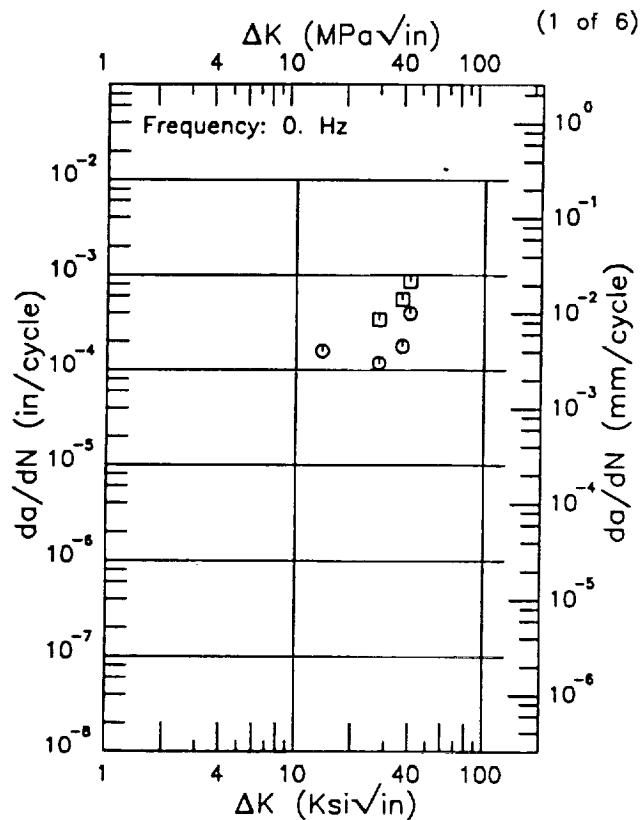
0. .5 .8 1.25 2. ---



F | 304 |

Condition/Ht: -99  
 Form:  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.1  
 Environment: BWR WATER;203°F

Yield Strength:  
 Ult. Strength:  
 Specimen Thk:  
 Specimen Width:  
 Ref: EPGES



ΔK (Ksi√in)      da/dN (10<sup>-6</sup>in/cycle)

ΔK (Ksi√in)      da/dN (10<sup>-6</sup>in/cycle)

RMS %  
 Error

Life Prediction Ratio Summary

0.    .5    .8    1.25    2.---

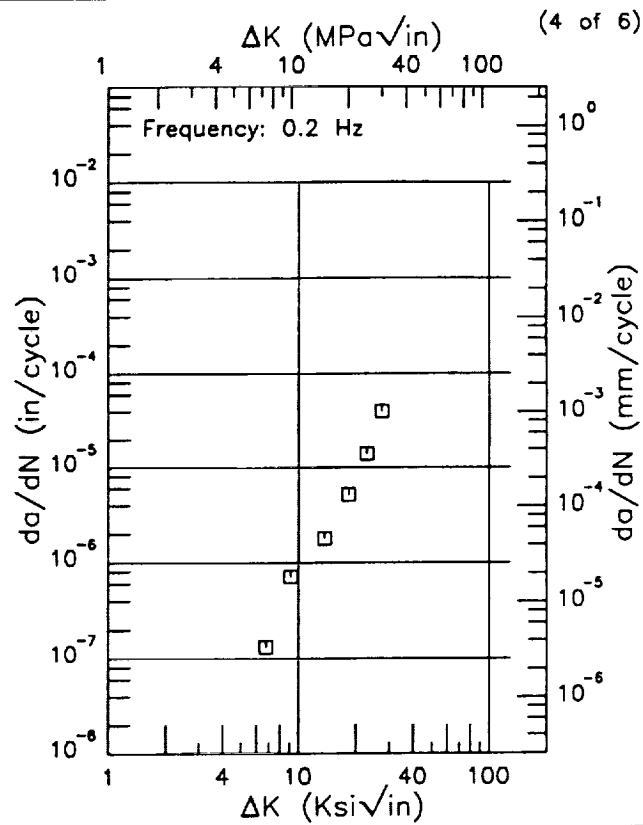
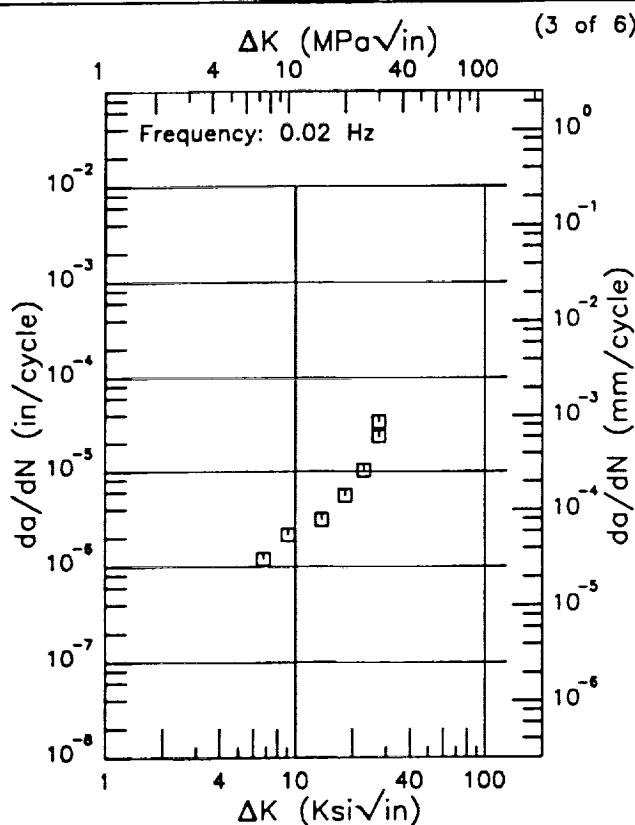
RMS %  
 Error

Life Prediction Ratio Summary

0.    .5    .8    1.25    2.---

Condition/Ht: -99  
 Form:  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.1  
 Environment: BWR WATER;203°F

Yield Strength:  
 Ult. Strength:  
 Specimen Thk:  
 Specimen Width:  
 Ref: EPGES



$\Delta K$  (Ksi√in)       $da/dN$  (10<sup>-6</sup> in/cycle)

$\Delta K$  (Ksi√in)       $da/dN$  (10<sup>-6</sup> in/cycle)

RMS %  
Error

Life Prediction Ratio Summary

0.    .5    .8    1.25    2. ---

RMS %  
Error

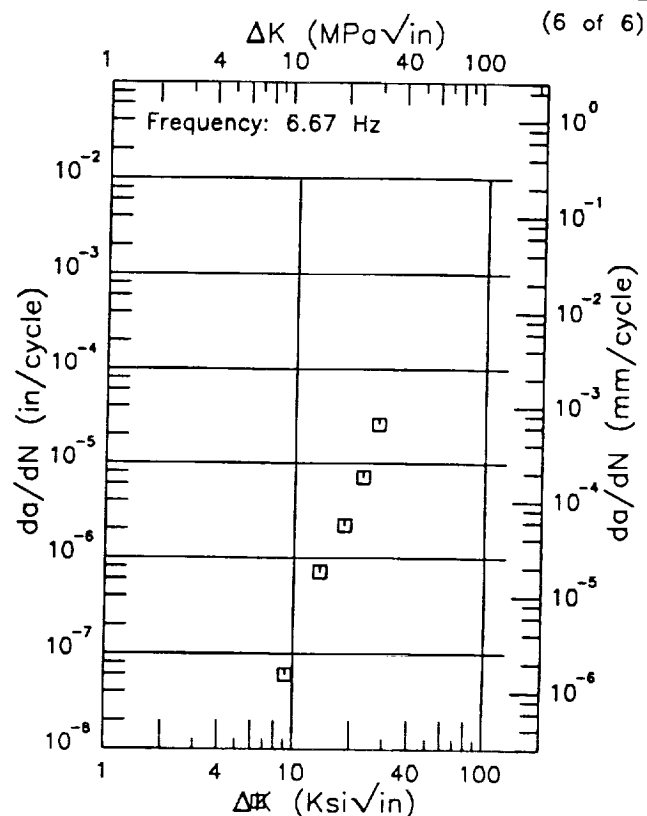
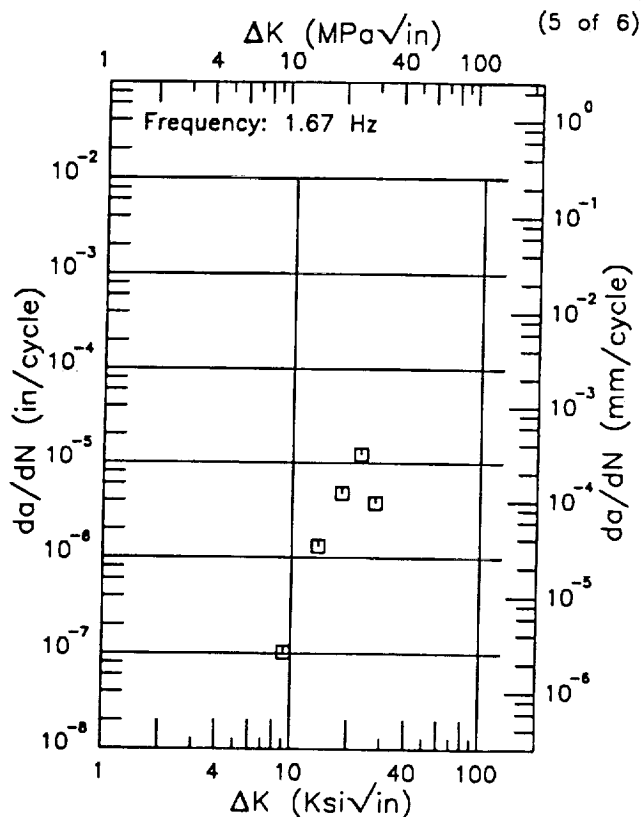
Life Prediction Ratio Summary

0.    .5    .8    1.25    2. ---

F | 304 |

Condition/Ht: -99  
 Form:  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.1  
 Environment: BWR WATER;203°F

Yield Strength:  
 Ult. Strength:  
 Specimen Thk:  
 Specimen Width:  
 Ref: EPGES



ΔK (Ksi√in)      da/dN (10<sup>-6</sup>in/cycle)

ΔK (Ksi√in)      da/dN (10<sup>-6</sup>in/cycle)

RMS %  
Error

Life Prediction Ratio Summary

0.   .5   .8   1.25   2. ---

RMS %  
Error

Life Prediction Ratio Summary

0.   .5   .8   1.25   2. ---

Condition/Ht: -99

Form:

Specimen Type: Cantilever SG

Orientation:

Stress Ratio: 0.

Frequency: 0.2 Hz

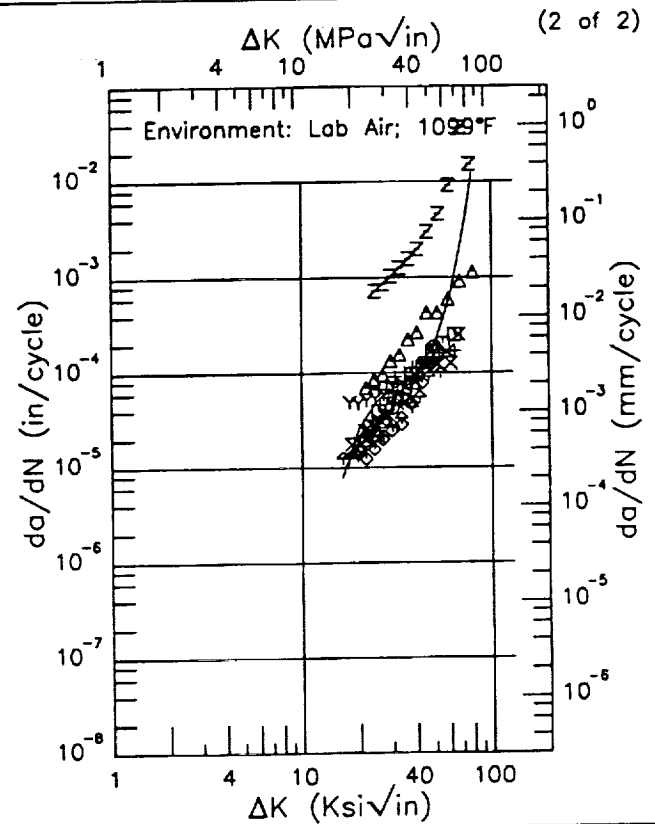
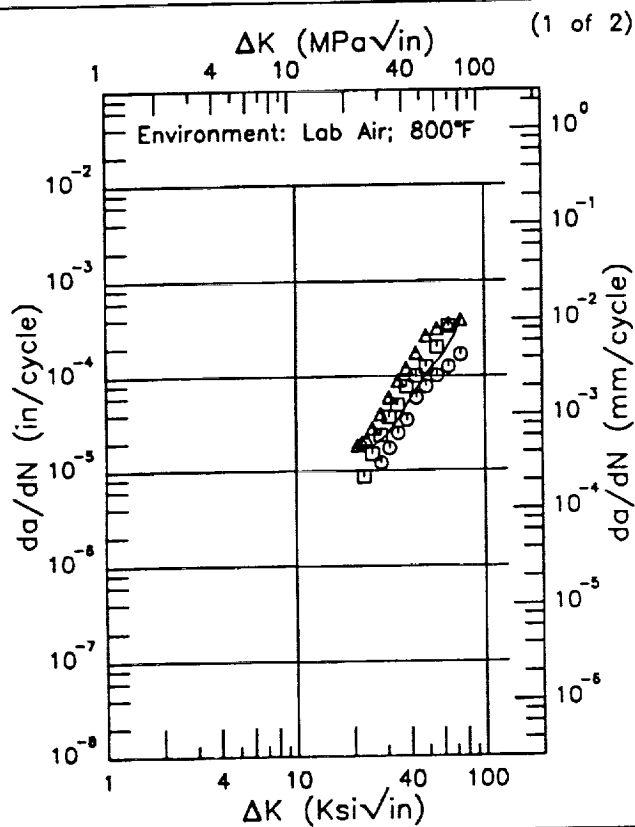
Yield Strength:

Ult. Strength:

Specimen Thk: 0.498 - 0.503 in.

Specimen Width: 2.464 - 2.504 in.

Ref: EPNRL



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
20.91 (min)	18.7
25.	17.9
30.	23.9
35.	37.1
40.	58.6
50.	113.
60.	167.
70.	286.
74.27 (max)	383.

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
16.33 (min)	7.83
20.	26.2
25.	51.1
30.	66.9
35.	80.4
40.	100.
50.	203.
60.	609.
70.	2582.
79.09 (max)	12272.

RMS %  
Error  
72.18

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

RMS %  
Error  
>100.0

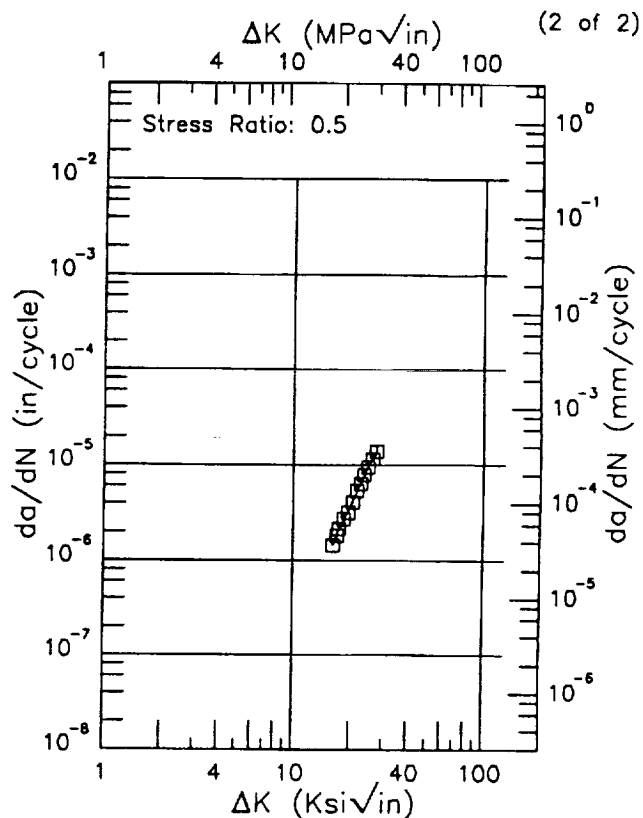
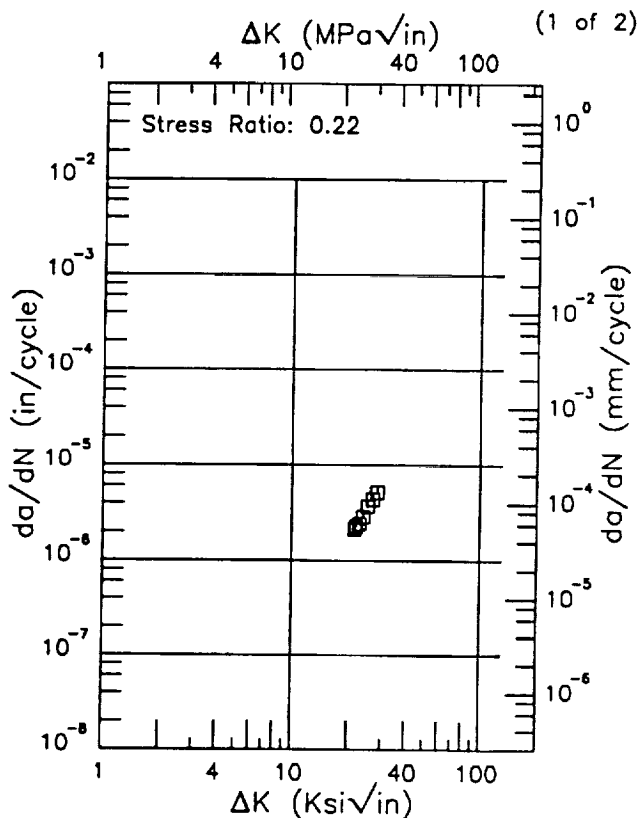
Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

R 304

Condition/Ht: -99  
Form:  
Specimen Type: CT  
Orientation:  
Frequency: 1 Hz  
Environment: LAB AIR; RT

Yield Strength:  
Ult. Strength:  
Specimen Thk:  
Specimen Width:  
Ref: EPSE0



ΔK (Ksi√in)      da/dN (10<sup>-6</sup>in/cycle)

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
16.25 (min)	1.47
20.	3.68
25.	9.98
27.35 (max)	13.3

RMS %  
Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

RMS %  
Error

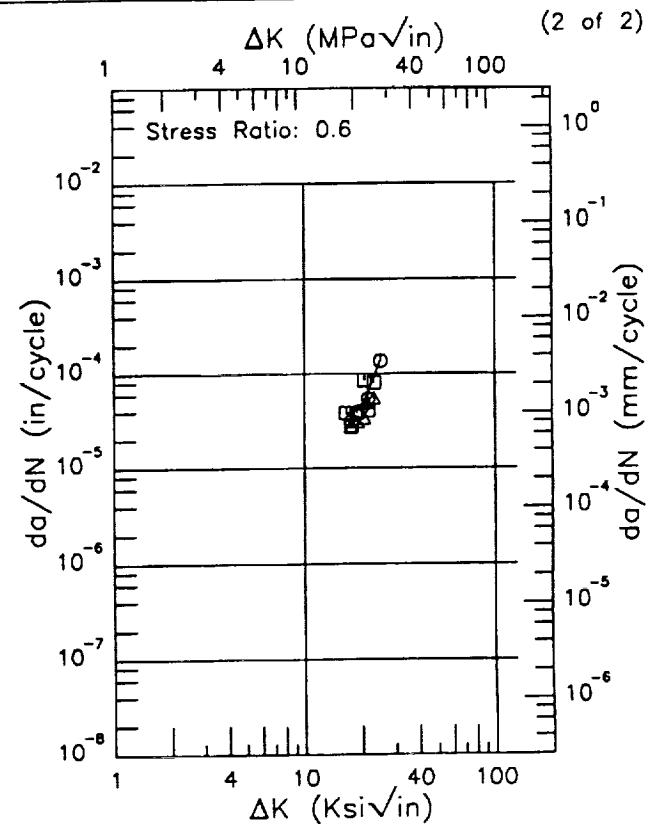
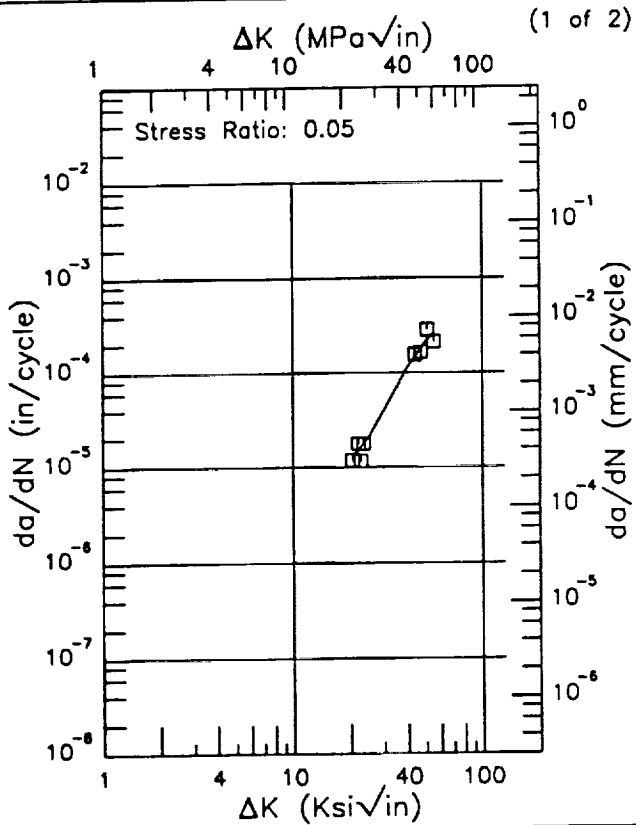
2.65

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

Condition/Ht: -99  
 Form:  
 Specimen Type: CT  
 Orientation:  
 Frequency: 0. Hz  
 Environment: BWR WATER;550.\*F

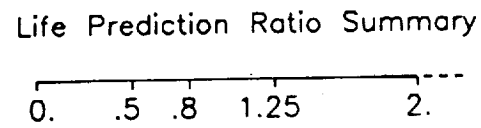
Yield Strength: 21.8 ksi  
 Ult. Strength: 63.1 ksi  
 Specimen Thk: 1 in.  
 Specimen Width: 2.55 in.  
 Ref: EPGES



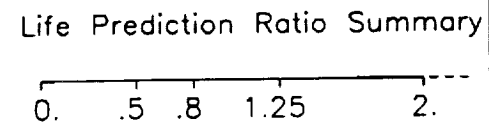
$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
20.52 (min)	12.5
25.	20.9
30.	39.6
35.	70.8
40.	114.
50.	216.
55.01 (max)	257.

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
16.52 (min)	37.9
20.	43.9
25.	135.
25.00 (max)	135.

RMS %  
 Error  
 16.61



RMS %  
 Error  
 28.63



R

304

Condition/Ht: -99

Form:

Specimen Type: CT

Orientation:

Frequency: 0.1 Hz

Environment: BWR WATER;550.°F

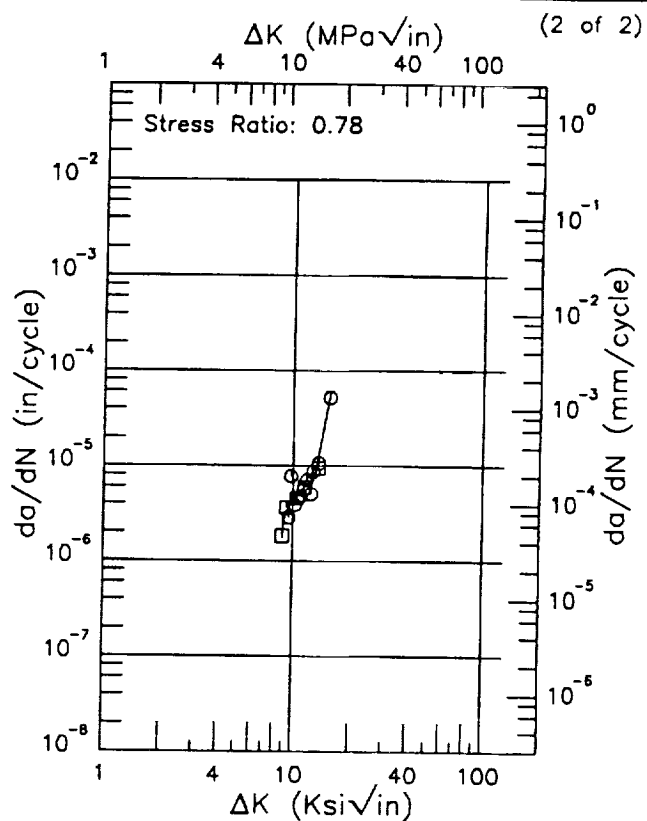
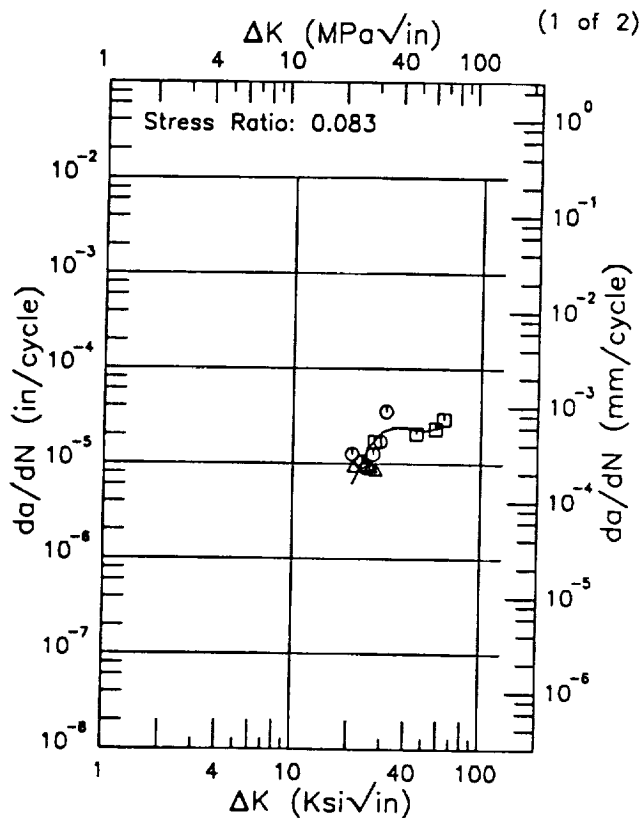
Yield Strength: 21.8 ksi

Ult. Strength: 63.1 ksi

Specimen Thk: 1 in.

Specimen Width: 2.55 in.

Ref: EPGES



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
20.52 (min)	6.19
25.	15.0
30.	21.8
35.	23.9
40.	23.6
50.	22.2
60.	23.9
62.99 (max)	25.3

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
8.80 (min)	1.74
9.	2.71
10.	4.66
13.	7.44
15.51 (max)	51.0

RMS %  
Error  
39.99

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

RMS %  
Error  
28.38

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

Condition/Ht: -99

Form:

Specimen Type: CT

Orientation:

Frequency: 0.1 Hz

Environment: BWR WATER;550.°F

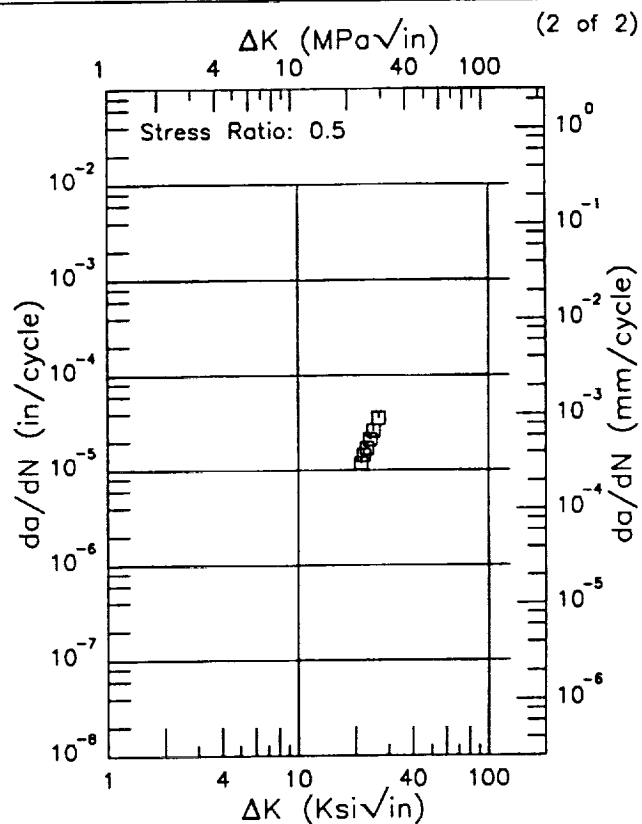
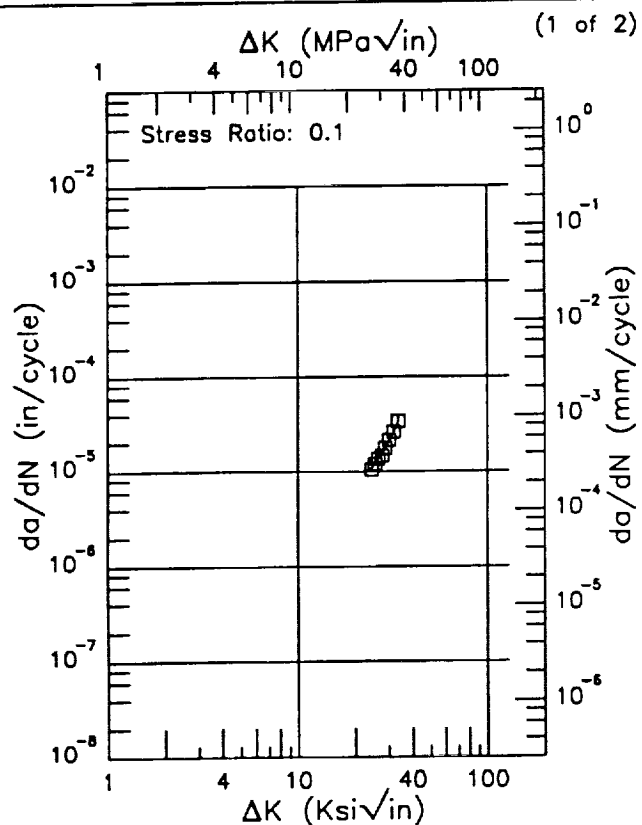
Yield Strength:

Ult. Strength:

Specimen Thk:

Specimen Width:

Ref: EPSE0



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
24.26 (min)	10.5
25.	11.5
30.	20.4
33.62 (max)	33.6

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
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RMS %  
Error  
2.85

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS %  
Error

Life Prediction Ratio Summary

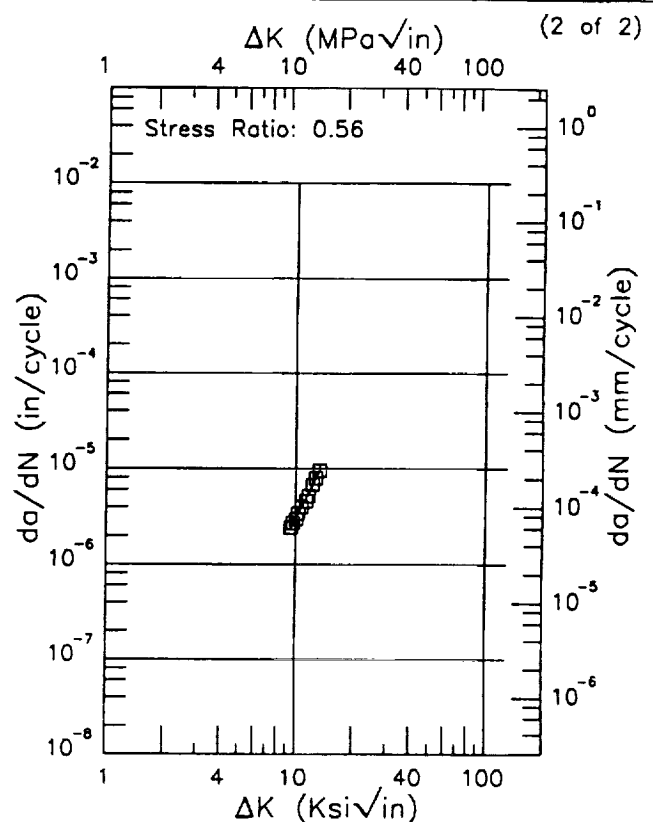
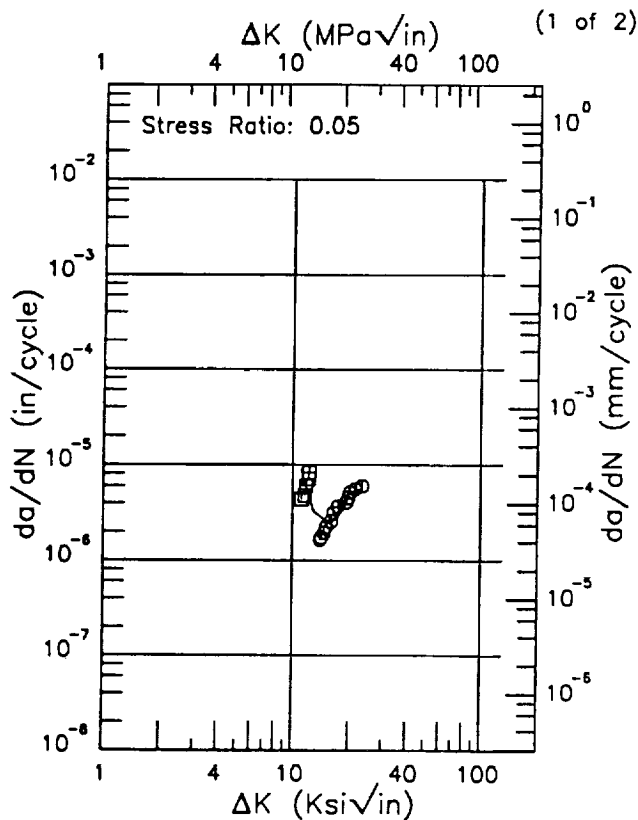
0. .5 .8 1.25 2.



R 304

Condition/Ht: -99  
 Form:  
 Specimen Type: CT  
 Orientation:  
 Frequency: 0.1 Hz  
 Environment: BWR WATER;550.°F

Yield Strength:  
 Ult. Strength:  
 Specimen Thk:  
 Specimen Width:  
 Ref: EPSE0



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
11.10 (min)	8.95
13.	3.27
16.	2.40
20.	5.12
23.25 (max)	5.56

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
9.46 (min)	2.47
10.	2.97
13.	8.50
13.29 (max)	9.45

RMS %  
 Error  
 29.98

Life Prediction Ratio Summary

0. .5 .8 1.25 2.---

RMS %  
 Error  
 3.24

Life Prediction Ratio Summary

0. .5 .8 1.25 2.---

Condition/Ht: -99

Form:

Specimen Type: CT

Orientation:

Stress Ratio: 0.5

Frequency: 0. Hz

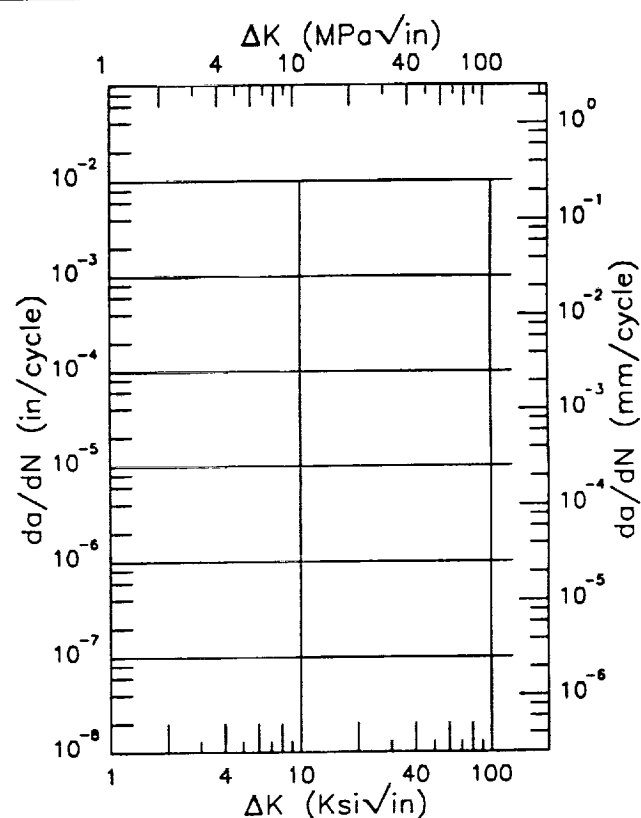
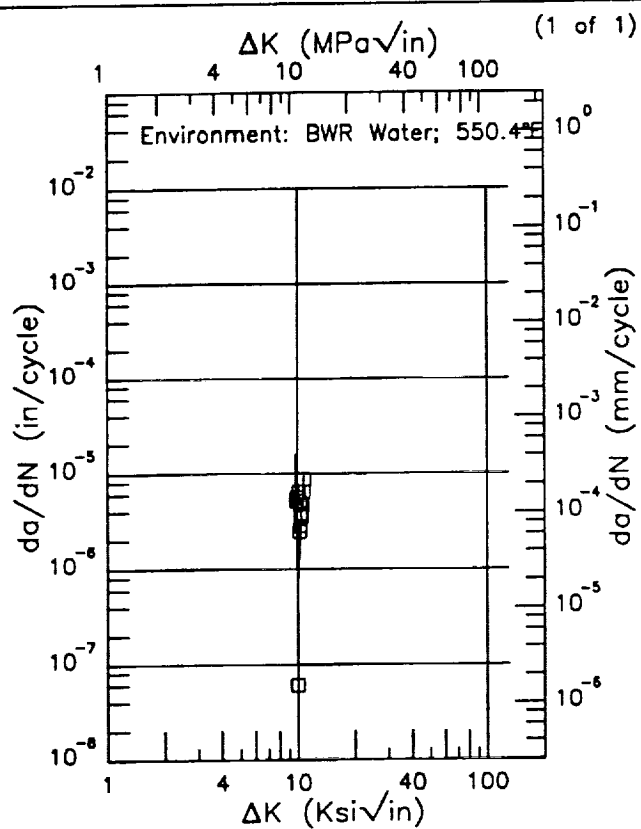
Yield Strength:

Ult. Strength:

Specimen Thk:

Specimen Width:

Ref: EPSE0



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
9.75 (min)	15.8
10.	0.703
10.75 (max)	9.14

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)

RMS %  
Error  
>100.0

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS %  
Error

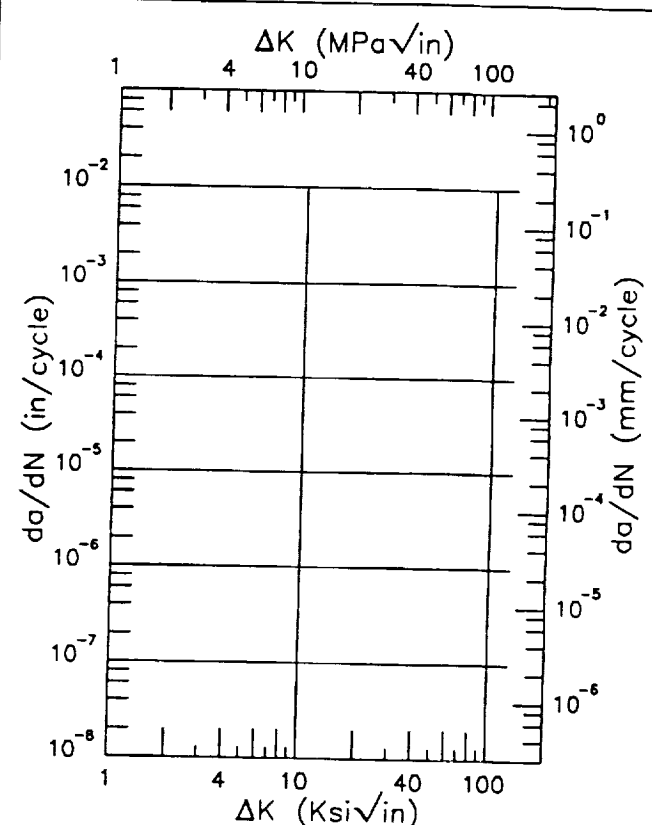
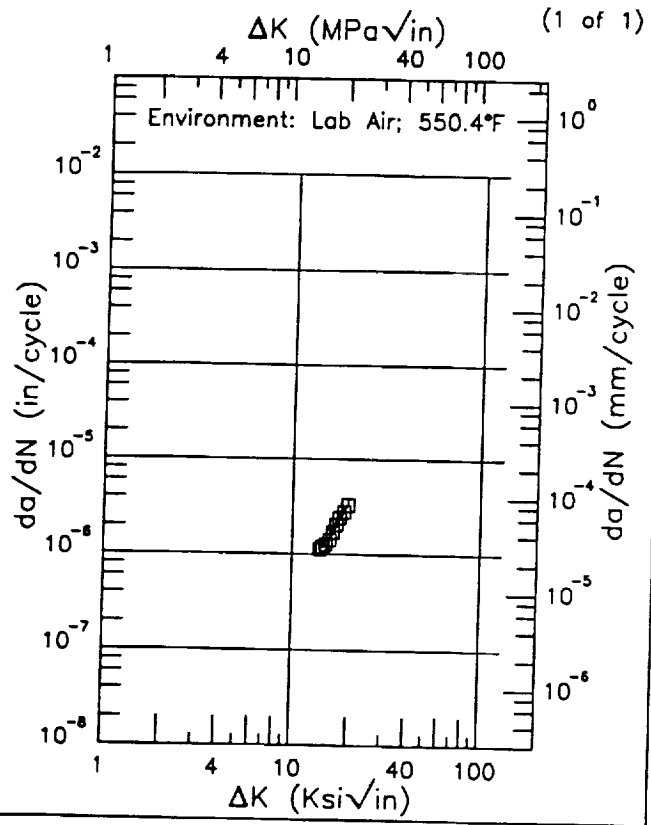
Life Prediction Ratio Summary

0. .5 .8 1.25 2.

E 304

Condition/Ht: -99  
 Form:  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.5  
 Frequency: 0.5 Hz

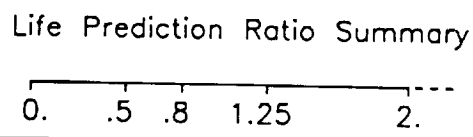
Yield Strength:  
 Ult. Strength:  
 Specimen Thk:  
 Specimen Width:  
 Ref: EPSE0



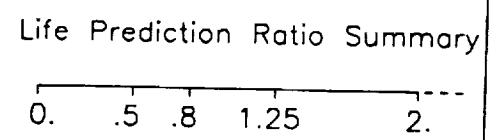
$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
13.95 (min)	1.12
16	1.57
19.50 (max)	3.29

$\Delta K$  (Ksi√in)       $da/dN$  ( $10^{-6}$  in/cycle)

RMS %  
 Error  
 3.85



RMS %  
 Error



A1-76

F 304

Condition/Ht: -99

Form:

Specimen Type: CT

Orientation:

Stress Ratio: 0.6

Environment: BWR WATER;550.°F

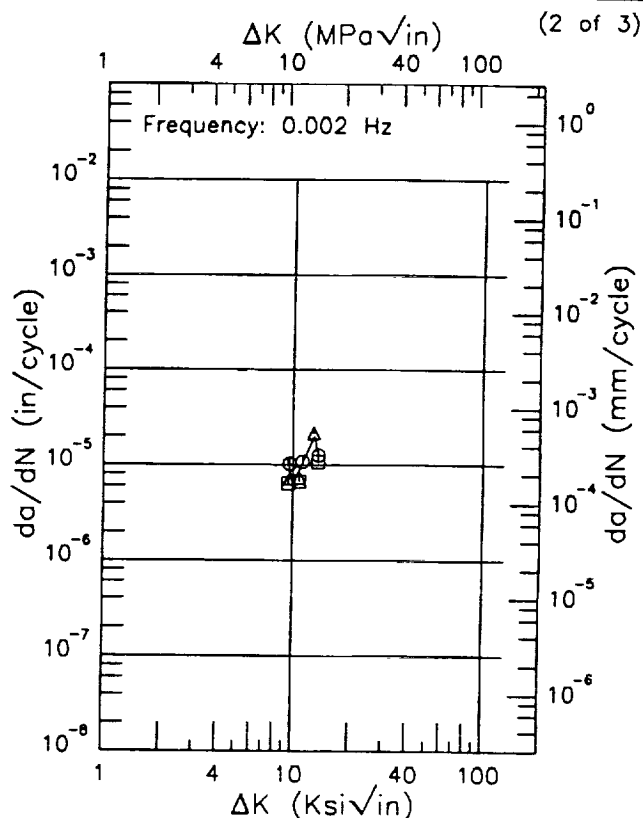
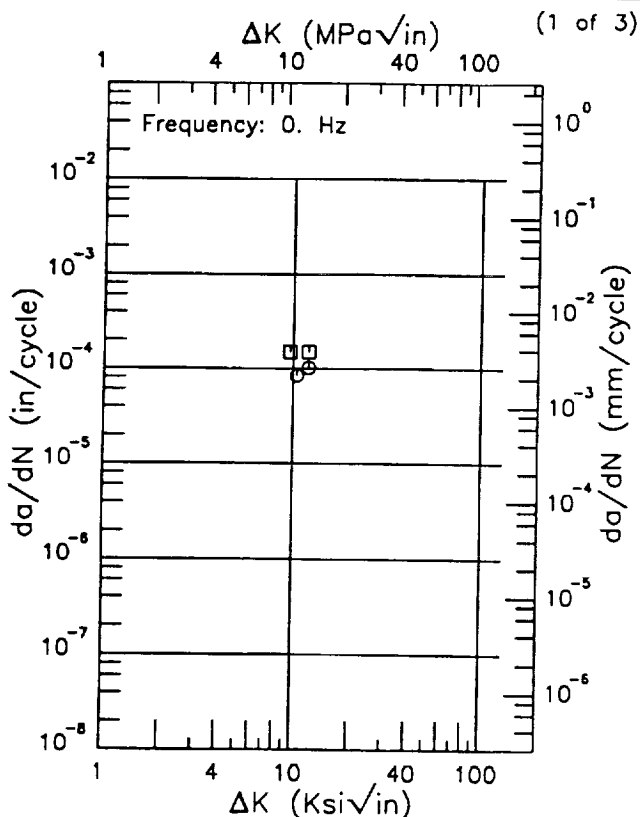
Yield Strength: 21.8 ksi

Ult. Strength: 63.1 ksi

Specimen Thk: 1 in.

Specimen Width: 2.548 - 2.55 in.

Ref: EPGES



ΔK (Ksi√in)      da/dN (10<sup>-6</sup>in/cycle)

ΔK (Ksi√in)      da/dN (10<sup>-6</sup>in/cycle)

9.40 (min)	11.6
10.	6.32
13.	20.0
13.60 (max)	12.7

RMS %  
Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

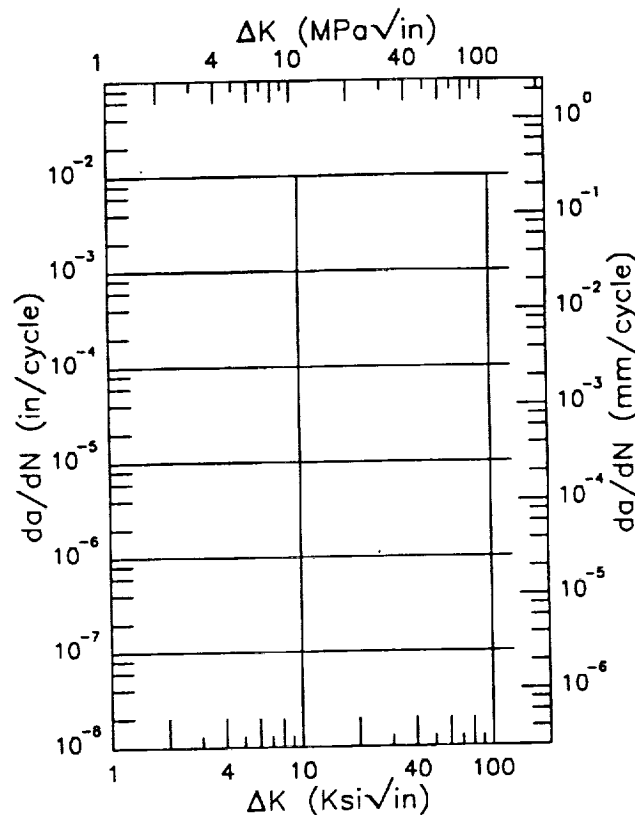
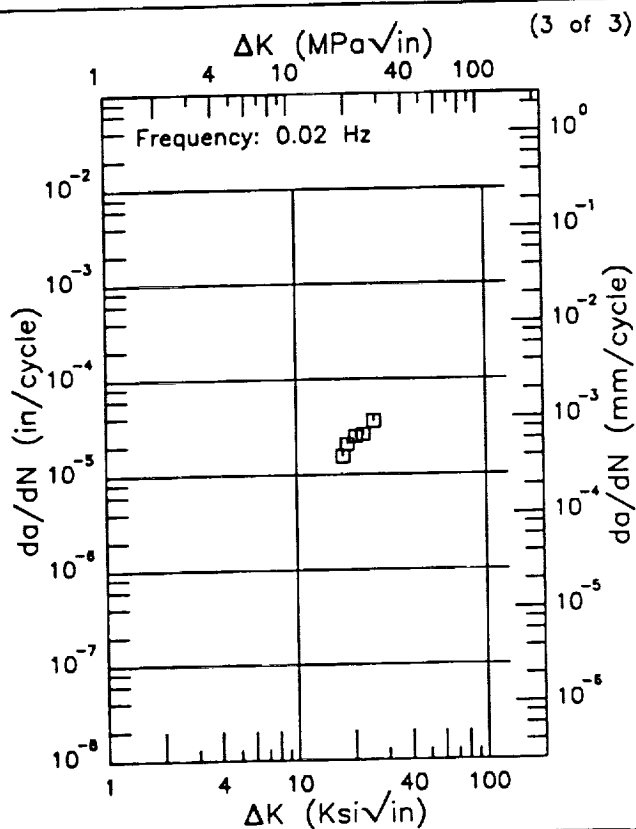
RMS %  
Error  
21.43

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

Condition/Ht: -99  
 Form:  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.6  
 Environment: BWR WATER;550.°F

Yield Strength: 21.8 ksi  
 Ult. Strength: 63.1 ksi  
 Specimen Thk: 1 in.  
 Specimen Width: 2.548 - 2.55 in.  
 Ref: EPGES



$\Delta K$  (Ksi√in)       $da/dN$  ( $10^{-6}$  in/cycle)

$\Delta K$  (Ksi√in)       $da/dN$  ( $10^{-6}$  in/cycle)

RMS %  
Error

Life Prediction Ratio Summary

0.    .5    .8    1.25    2.---

RMS %  
Error

Life Prediction Ratio Summary

0.    .5    .8    1.25    2.---

R | 304 |

Condition/Ht: -99

Form:

Specimen Type:

Orientation:

Frequency: 1 Hz

Environment: PWR WATER; RT

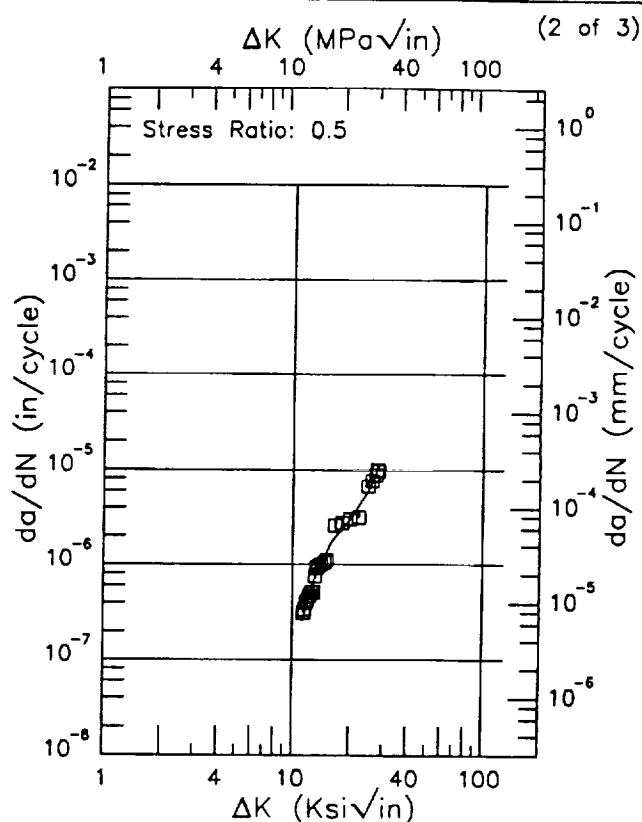
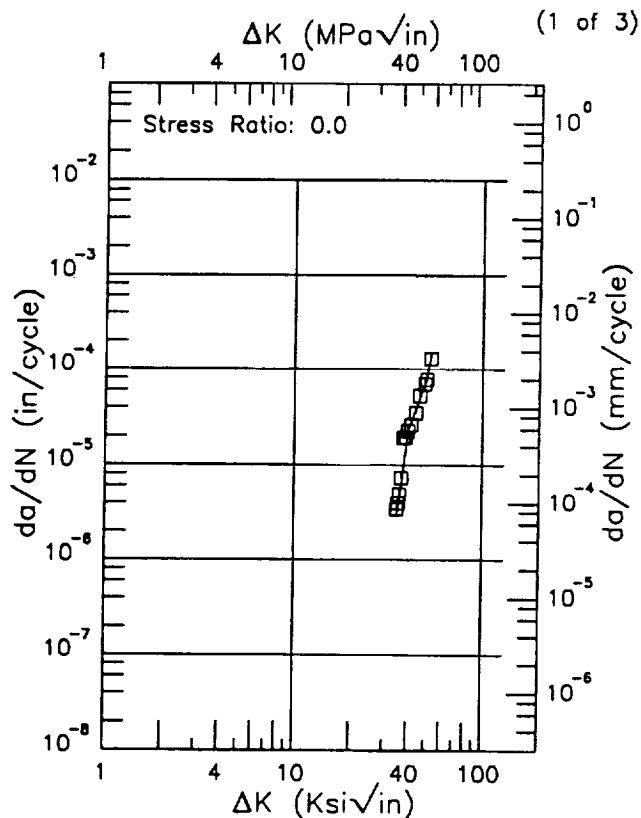
Yield Strength:

Ult. Strength:

Specimen Thk:

Specimen Width:

Ref: EPUKS



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
35.00 (min)	2.98
35.	2.99
40.	23.4
50.	77.8
52.50 (max)	133.

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
11.40 (min)	0.264
13.	0.692
16.	1.71
20.	3.03
25.	6.02
28.10 (max)	10.8

RMS %  
Error  
30.71

Life Prediction Ratio Summary

0. .5 .8 1.25 2.---

RMS %  
Error  
15.26

Life Prediction Ratio Summary

0. .5 .8 1.25 2.---

Condition/Ht: -99

Form:

Specimen Type:

Orientation:

Frequency: 1 Hz

Environment: PWR WATER; RT

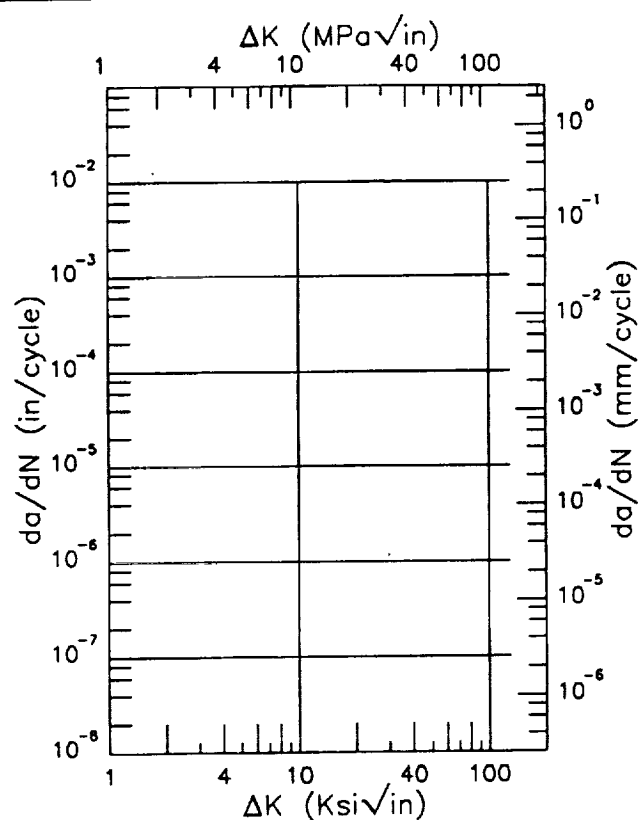
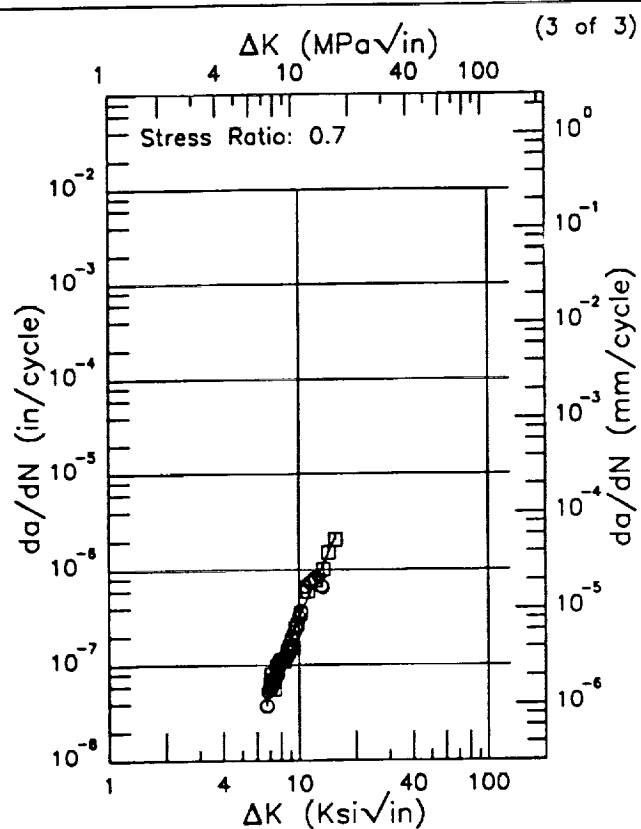
Yield Strength:

Ult. Strength:

Specimen Thk:

Specimen Width:

Ref: EPUKS



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
6.72 (min)	0.0533
7.	0.0593
8.	0.0994
9.	0.182
10.	0.328
13.	0.973
15.51 (max)	2.18

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
--------------------------------------	-------------------------------

RMS %  
Error  
15.43

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS %  
Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.



F | 304 |

Condition/Ht: -99

Form:

Specimen Type:

Orientation:

Stress Ratio: 0.

Environment: LAB AIR; RT

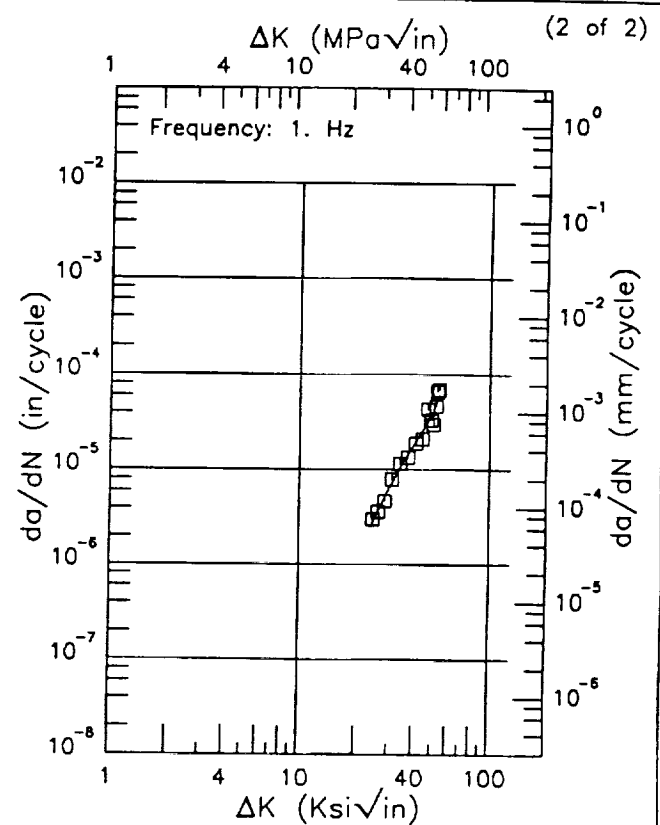
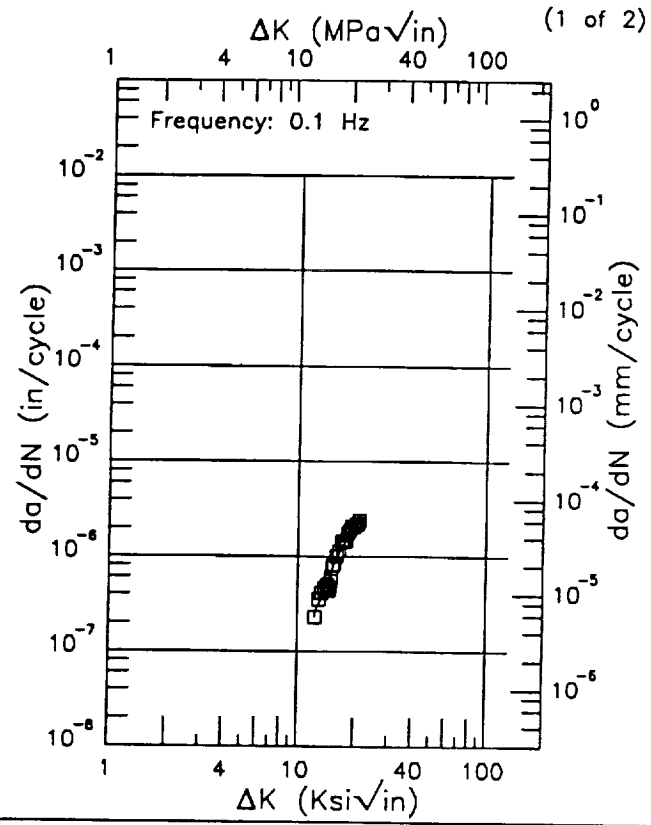
Yield Strength:

Ult. Strength:

Specimen Thk:

Specimen Width:

Ref: EPUKS



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
12.30 (min)	0.260
13.	0.327
16.	0.965
20.	2.17
21.00 (max)	2.24

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
24.40 (min)	2.75
25.	3.06
30.	6.62
35.	11.9
40.	18.1
50.	39.4
53.70 (max)	60.9

RMS % Error	Life Prediction Ratio Summary
11.95	0. .5 .8 1.25 2.---

RMS % Error	Life Prediction Ratio Summary
16.16	0. .5 .8 1.25 2.---

Condition/Ht: -99

Form:

Specimen Type:

Orientation:

Stress Ratio: 0.

Environment: PWR WATER; RT

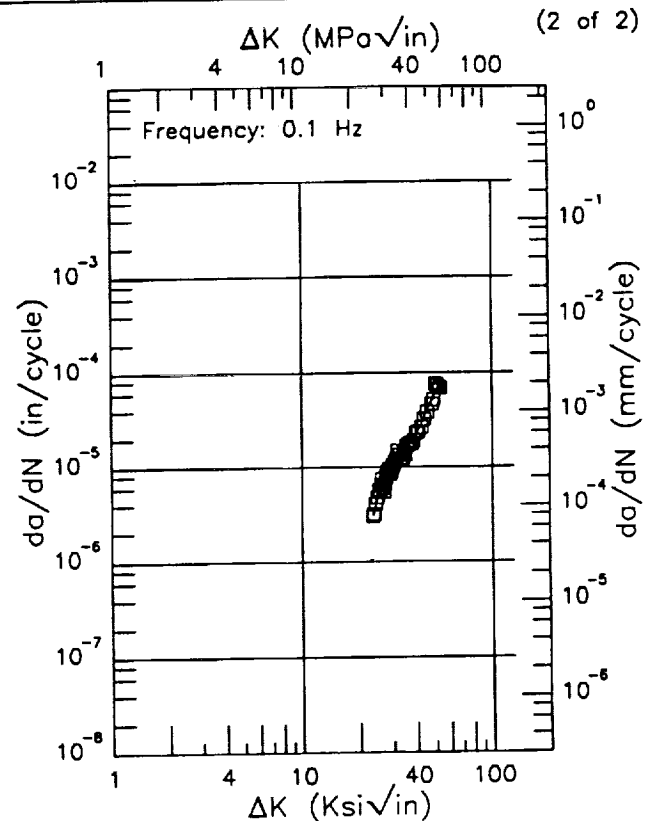
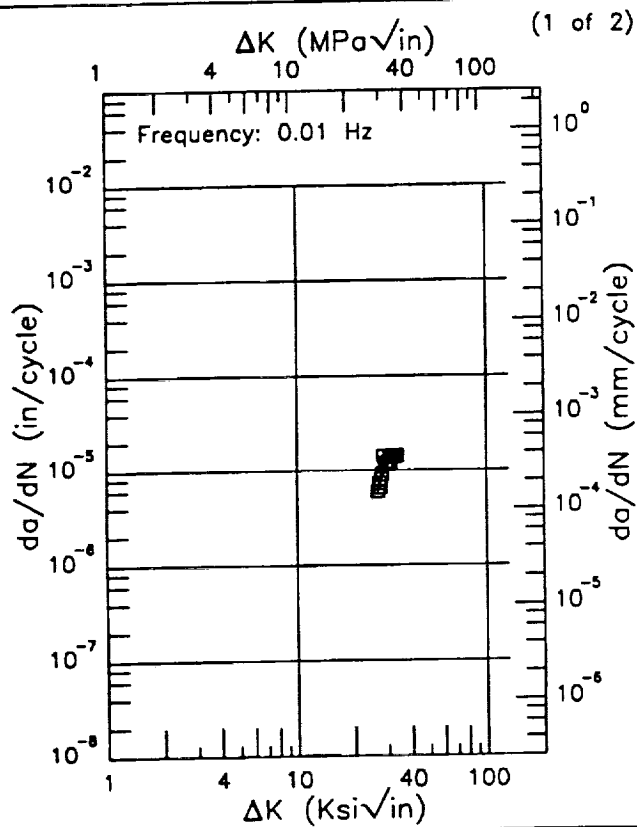
Yield Strength:

Ult. Strength:

Specimen Thk:

Specimen Width:

Ref: EPUKS



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
26.60 (min)	6.82
30.	11.5
33.50 (max)	14.2

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
23.50 (min)	3.04
25.	4.84
30.	10.3
35.	15.1
40.	21.8
50.	62.7
53.10 (max)	73.9

RMS %  
Error  
15.74

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

RMS %  
Error  
10.37

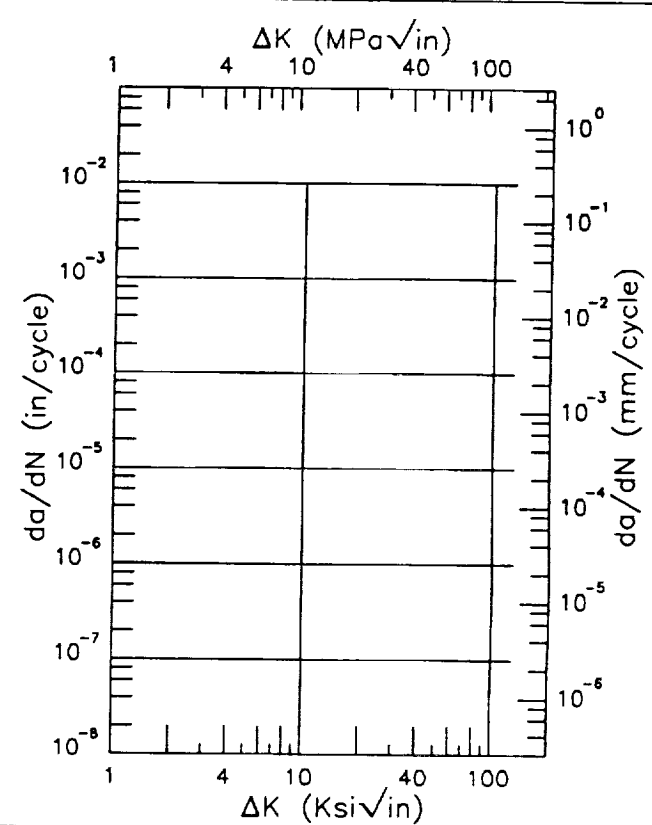
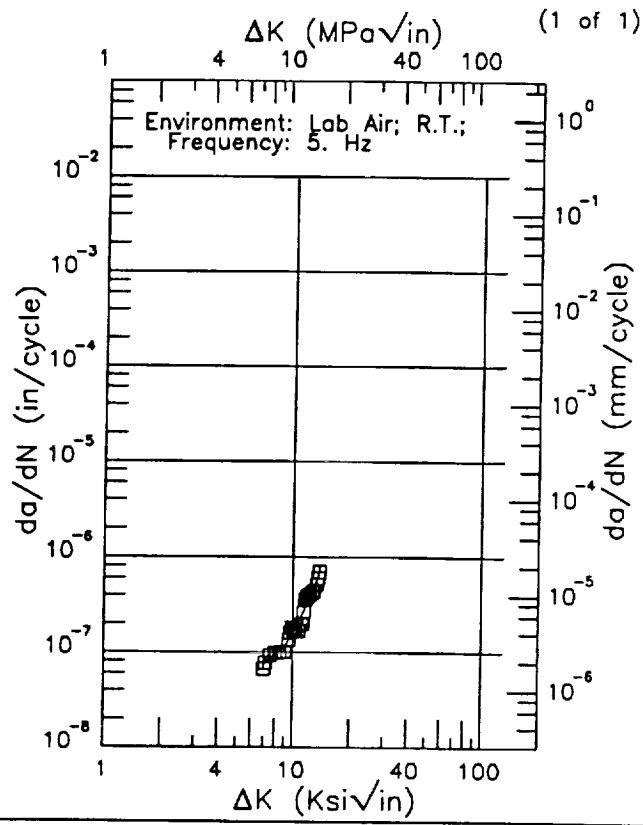
Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

EF 304

Condition/Ht: -99  
 Form:  
 Specimen Type:  
 Orientation:  
 Stress Ratio: 0.7

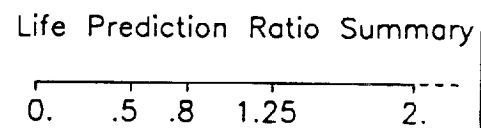
Yield Strength:  
 Ult. Strength:  
 Specimen Thk:  
 Specimen Width:  
 Ref: EPUKS



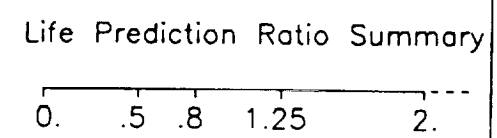
$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
6.96 (min)	0.0780
7.	0.0783
8.	0.0907
9.	0.115
10.	0.156
13.	0.494
13.68 (max)	0.662

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
--------------------------------------	-------------------------------

RMS %  
 Error  
 12.84



RMS %  
 Error

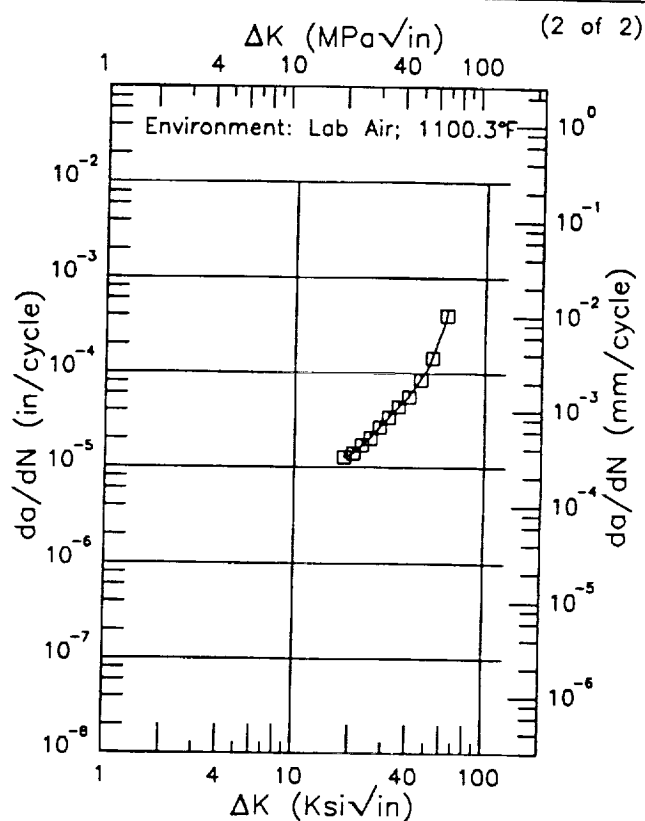
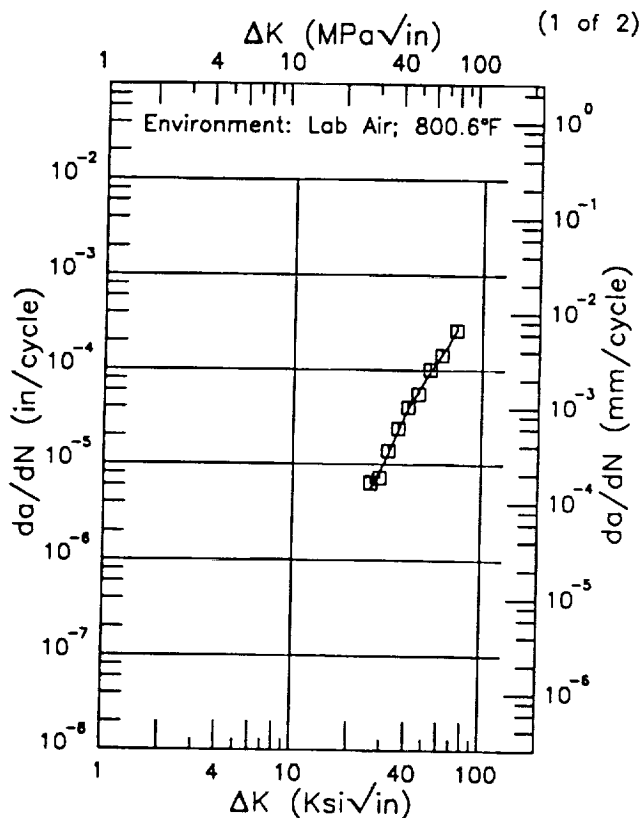


A1-84

E 308

Condition/Ht: -99  
 Form:  
 Specimen Type: CB  
 Orientation: L-T  
 Stress Ratio: 0.  
 Frequency: 0.2 Hz

Yield Strength: 62.8 ksi  
 Ult. Strength: 94.6 ksi  
 Specimen Thk: 0.5 in.  
 Specimen Width: 2.46 in.  
 Ref: EPNRL



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
25.79 (min)	5.75
30.	9.86
35.	20.4
40.	38.1
50.	81.2
60.	140.
70.	234.
72.42 (max)	260.

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
18.32 (min)	12.6
20.	13.7
25.	20.3
30.	30.6
35.	43.0
40.	57.5
50.	114.
60.	298.
62.52 (max)	400.

RMS %  
 Error  
 7.19

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS %  
 Error  
 2.17

Life Prediction Ratio Summary

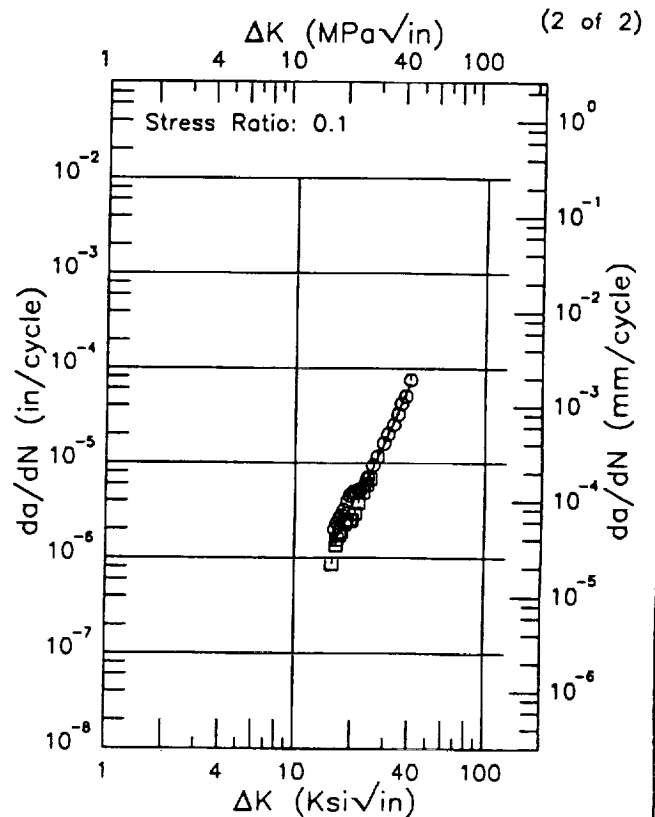
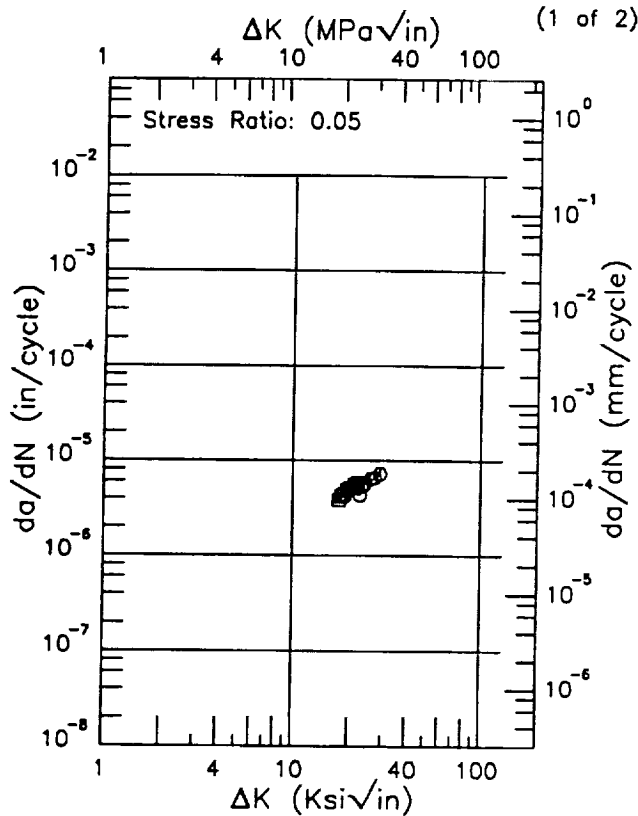
0. .5 .8 1.25 2.

A1-86

R 308L

Condition/Ht: -99  
Form:  
Specimen Type: CT  
Orientation:  
Frequency: 10 Hz  
Environment: LAB AIR; RT

Yield Strength: 64.5 ksi  
Ult. Strength: 67.6 ksi  
Specimen Thk: 0.787 - 0.984 in.  
Specimen Width: 1.575 - 1.969 in.  
Ref: EPBER



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
17.42 (min)	3.77
20.	5.04
25.	5.85
28.88 (max)	7.12

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
15.72 (min)	1.34
16.	1.46
20.	3.61
25.	7.95
30.	17.0
35.	35.8
40.	67.9
40.15 (max)	69.1

RMS %  
Error  
6.23

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS %  
Error  
21.15

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

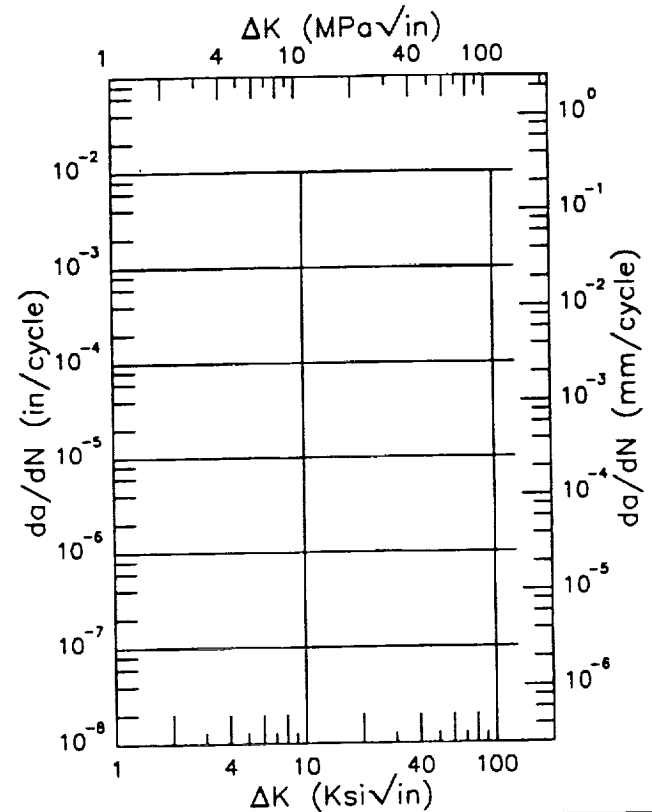
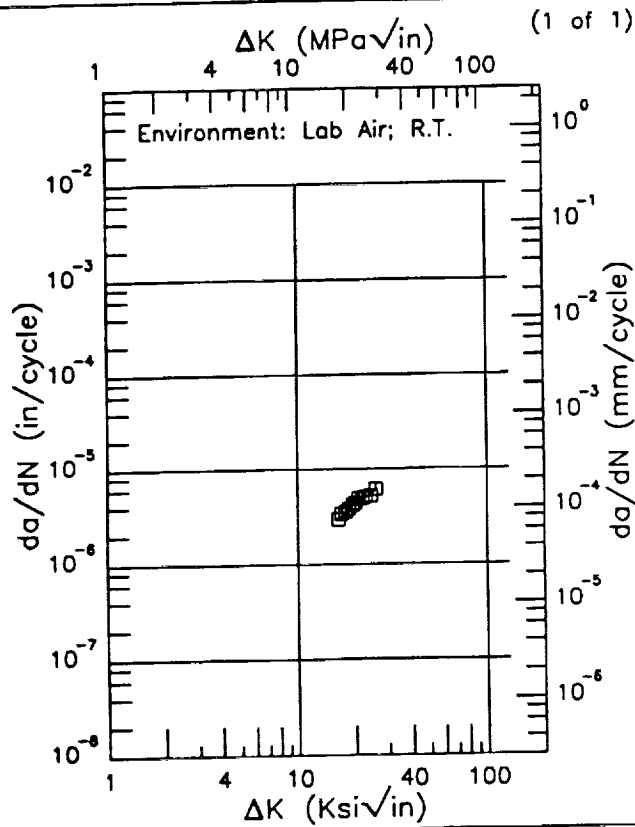
A1-87

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Condition/Ht: -99  
 Form:  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.05  
 Frequency: 5 Hz

Yield Strength: 64.5 ksi  
 Ult. Strength: 67.6 ksi  
 Specimen Thk: 0.787 in.  
 Specimen Width: 1.575 in.  
 Ref: EPBER



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
16.32 (min)	2.94
20.	4.39
25.	5.55
25.71 (max)	6.06

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
--------------------------------------	-----------------------------------

RMS %  
 Error  
 2.31

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS %  
 Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.



E 308L

Condition/Ht: -99

Form:

Specimen Type: CT

Orientation:

Stress Ratio: 0.1

Frequency: 5 Hz

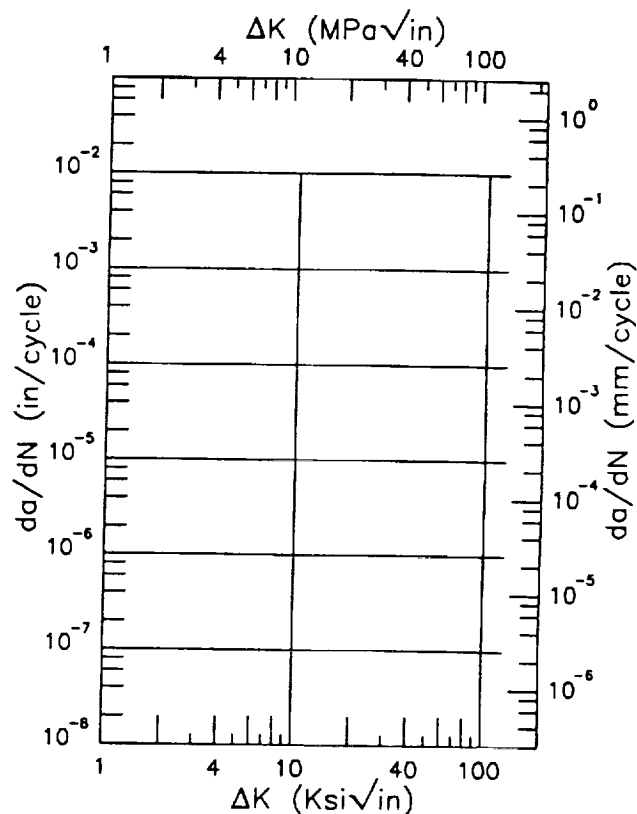
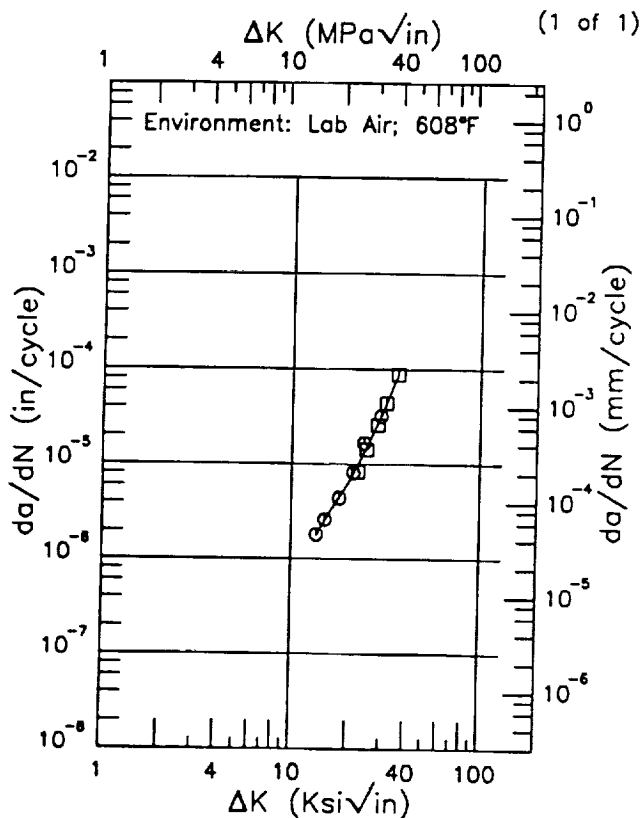
Yield Strength: 64.5 ksi

Ult. Strength: 67.6 ksi

Specimen Thk: 0.984 in.

Specimen Width: 1.969 in.

Ref: EPBER

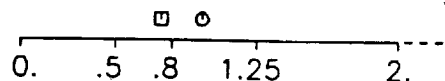


$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
13.53 (min)	1.81
16.	3.19
20.	6.41
25.	15.6
30.	34.8
35.	77.9
36.09 (max)	87.4

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
--------------------------------------	-----------------------------------

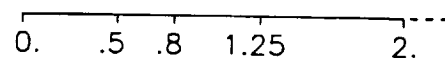
RMS %  
Error  
9.49

Life Prediction Ratio Summary



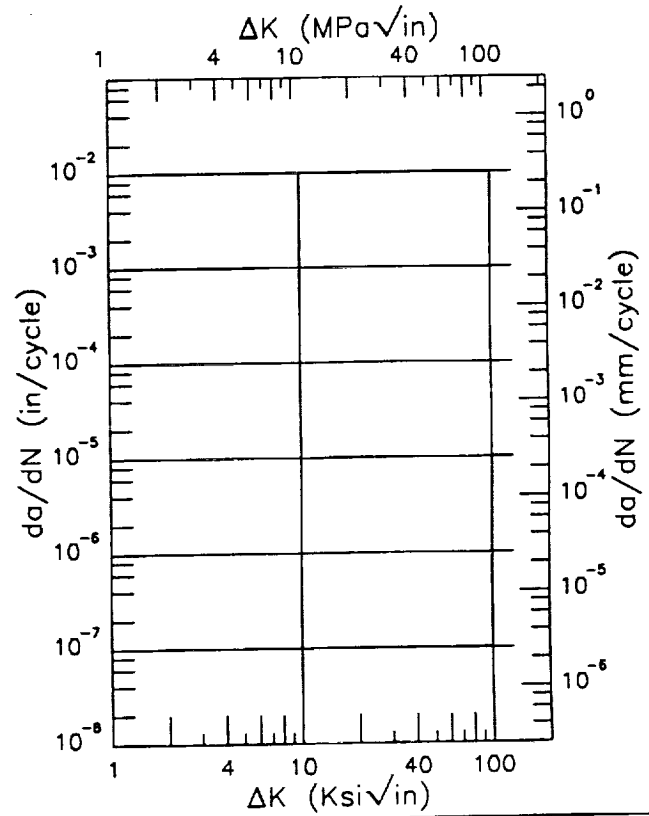
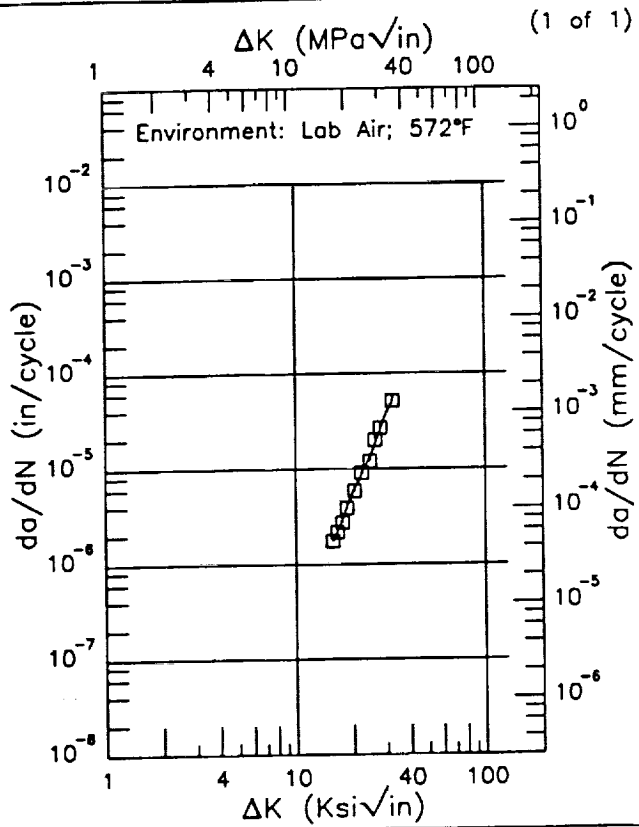
RMS %  
Error

Life Prediction Ratio Summary



Condition/Ht: -99  
 Form:  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.1  
 Frequency: 10 Hz

Yield Strength:  
 Ult. Strength:  
 Specimen Thk: 0.984 in.  
 Specimen Width: 1.969 in.  
 Ref: EPBER



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
15.56 (min)	1.80
16.	1.91
20.	5.79
25.	14.3
30.	37.8
32.37 (max)	50.5

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
---------------------	-------------------------------

RMS %  
 Error  
 5.79

Life Prediction Ratio Summary

RMS %  
 Error

Life Prediction Ratio Summary

F | 308L |

Condition/Ht: -99

Form:

Specimen Type: CT

Orientation:

Stress Ratio: 0.05

Environment: LAB AIR;608°F

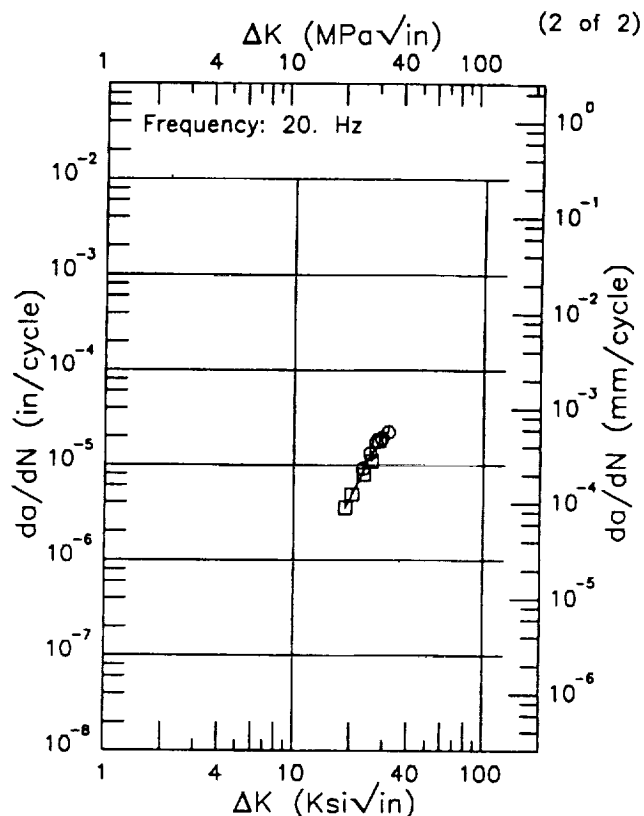
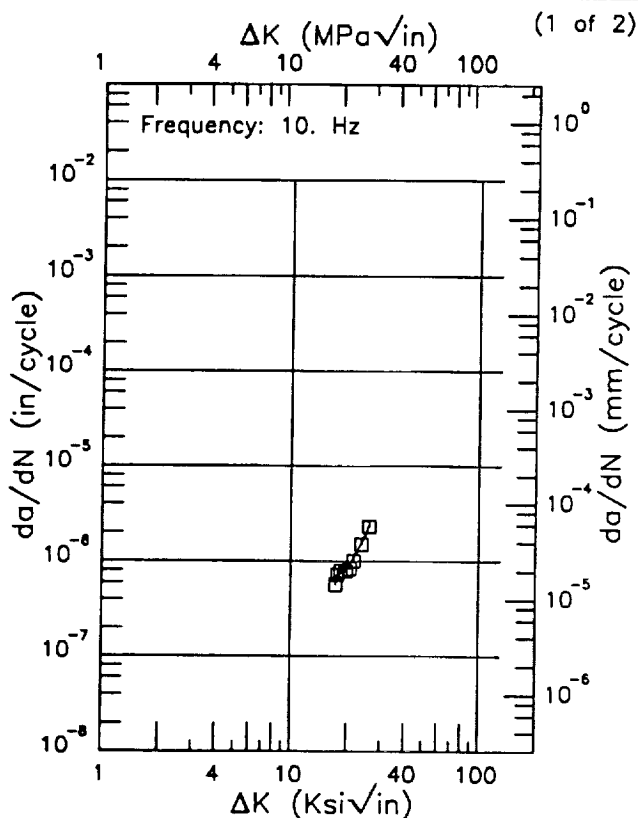
Yield Strength: 64.5 ksi

Ult. Strength: 67.6 ksi

Specimen Thk: 0.787 in.

Specimen Width: 1.575 in.

Ref: EPBER



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
17.20 (min)	0.691
20.	0.828
25.	1.91
25.91 (max)	2.32

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
18.70 (min)	3.47
20.	4.59
25.	11.8
30.	21.0
31.38 (max)	22.1

RMS %  
Error  
8.41

Life Prediction Ratio Summary  
□  
0. .5 .8 1.25 2. ---

RMS %  
Error  
8.61

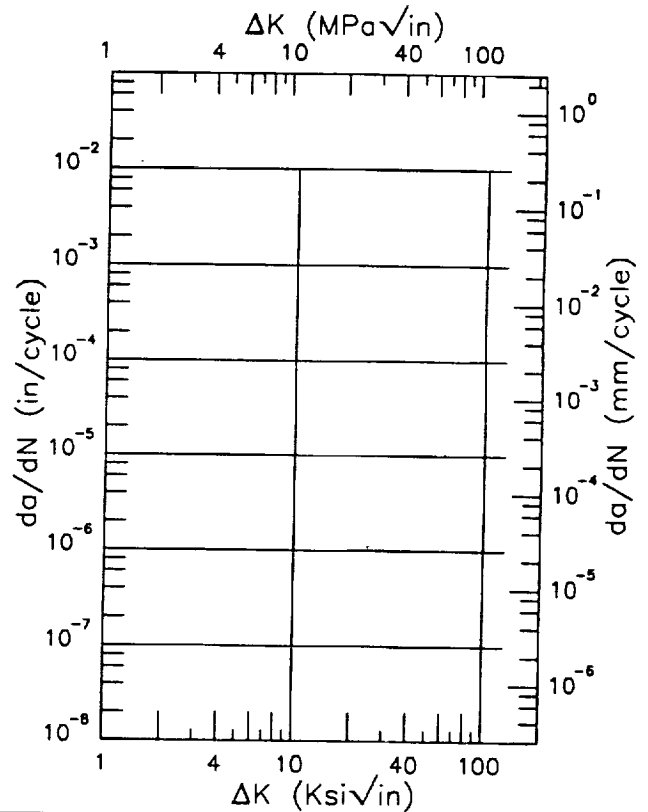
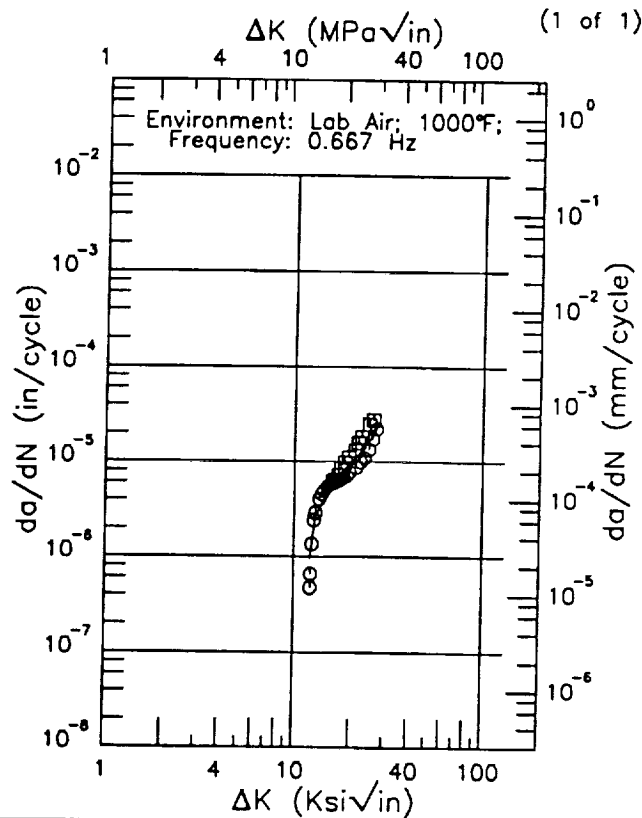
Life Prediction Ratio Summary  
□ ○  
0. .5 .8 1.25 2. ---

A1-92

EF 316H

Condition/Ht: ANNEALED  
Form: Plate  
Specimen Type: CT  
Orientation:  
Stress Ratio: 0.05

Yield Strength: 47.1 ksi  
Ult. Strength: 90.4 ksi  
Specimen Thk: 0.304 - 0.308 in.  
Specimen Width: 2.002 - 2.003 in.  
Ref: EPWHS



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
12.15 (min)	0.949
13.	2.70
16.	6.23
20.	9.88
25.	16.8
26.87 (max)	25.4

$\Delta K$  (Ksi√in)  $da/dN$  ( $10^{-6}$  in/cycle)

RMS %  
Error  
23.50

Life Prediction Ratio Summary  
0. 0.5 0.8 1.25 2.

RMS %  
Error

Life Prediction Ratio Summary  
0. 0.5 0.8 1.25 2.

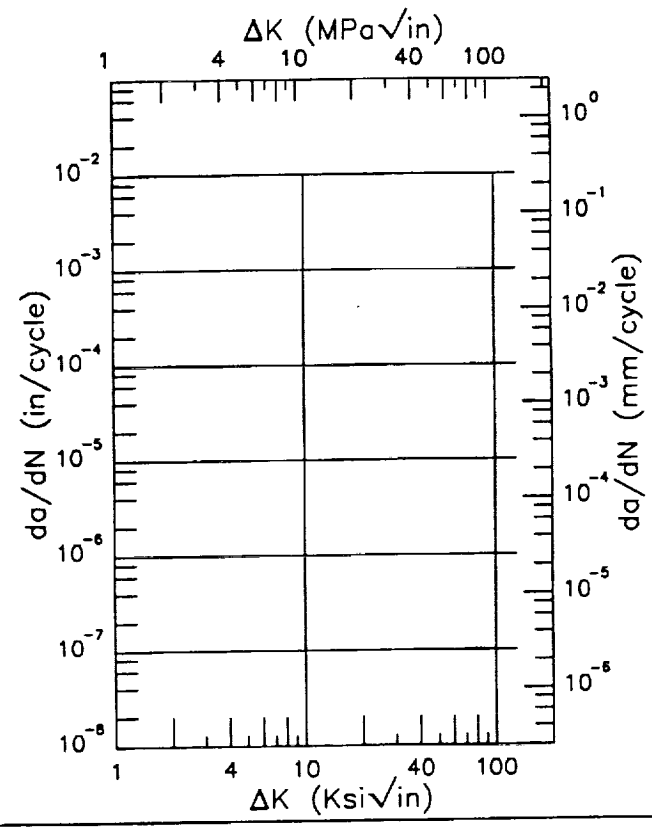
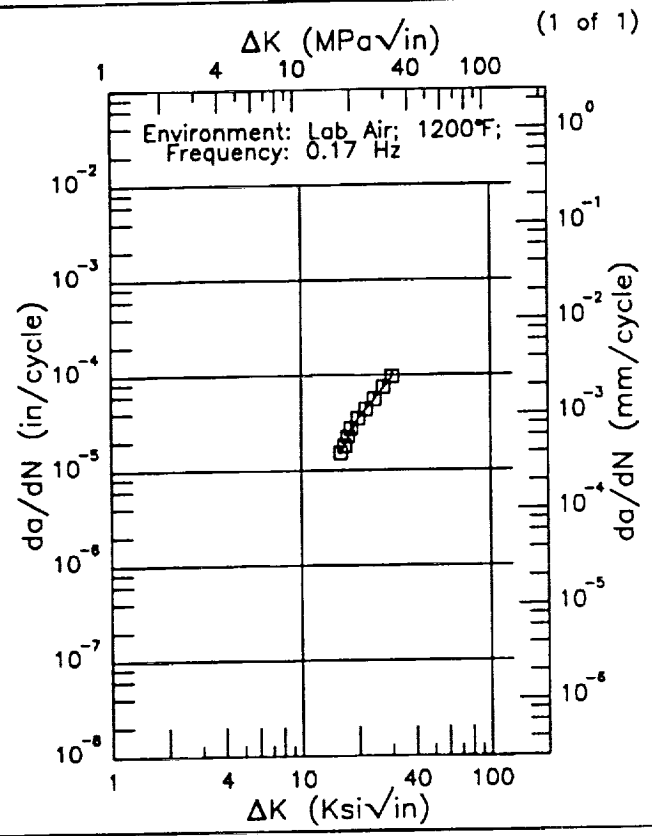
A1-93

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Condition/Ht: -99  
 Form:  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.1

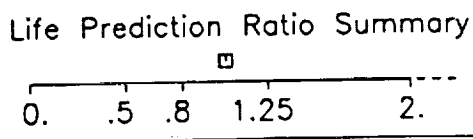
Yield Strength: 44.1 ksi  
 Ult. Strength: 82.2 ksi  
 Specimen Thk: 0.999 in.  
 Specimen Width: 2 in.  
 Ref: EPNRL



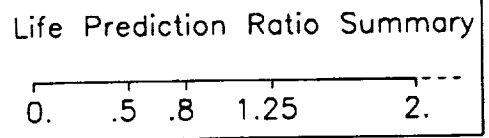
$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
16.06 (min)	15.2
20.	35.8
25.	60.4
30.	95.5
30.18 (max)	97.3

$\Delta K$  (Ksi√in)       $da/dN$  ( $10^{-6}$  in/cycle)

RMS %  
 Error  
 4.49



RMS %  
 Error



EF 316H

Condition/Ht: -99

Form:

Specimen Type: Cantilever SG

Orientation:

Stress Ratio: 0.

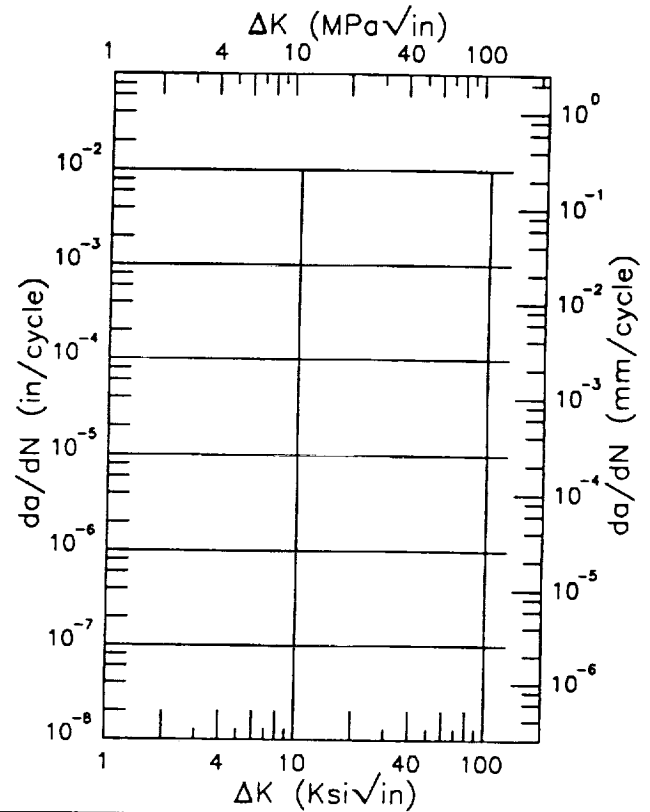
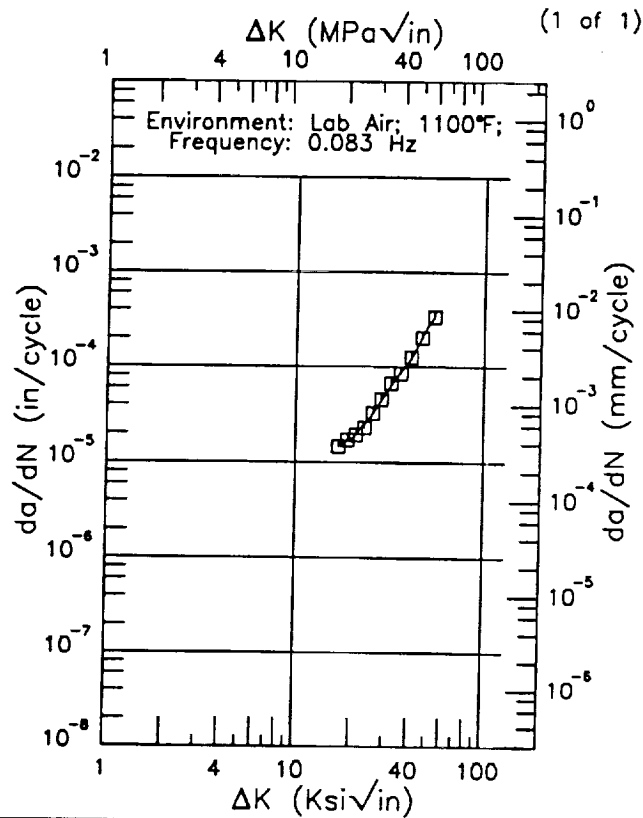
Yield Strength: 44.1 ksi

Ult. Strength: 82.2 ksi

Specimen Thk: 0.5 in.

Specimen Width: 2.5 in.

Ref: EPNRL



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
16.84 (min)	14.9
20.	17.8
25.	30.4
30.	53.6
35.	84.5
40.	117.
50.	275.
53.77 (max)	333.

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
---------------------	-------------------------------

RMS %  
Error  
3.97

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS %  
Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

Condition/Ht: -99

Form:

Specimen Type: Cantilever SG

Orientation:

Stress Ratio: 0.

Frequency: 0.2 Hz

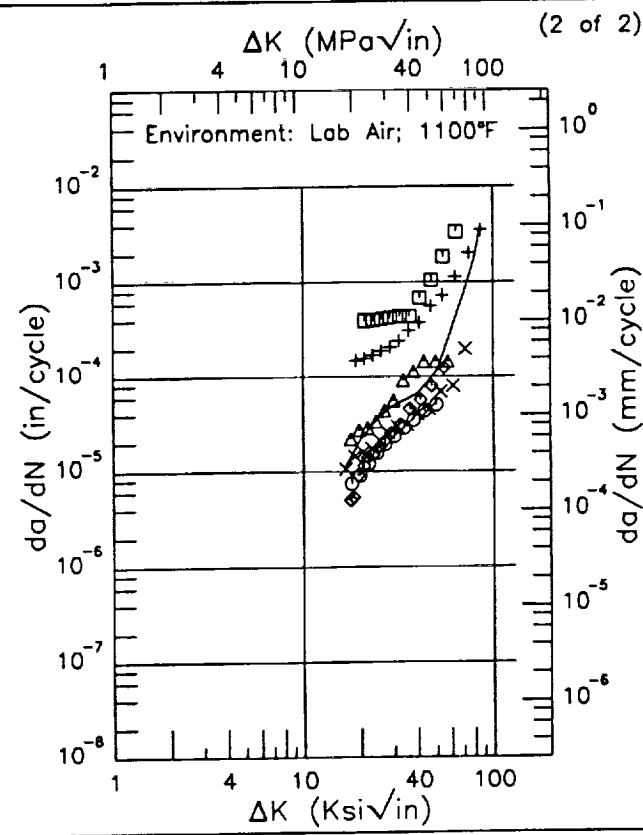
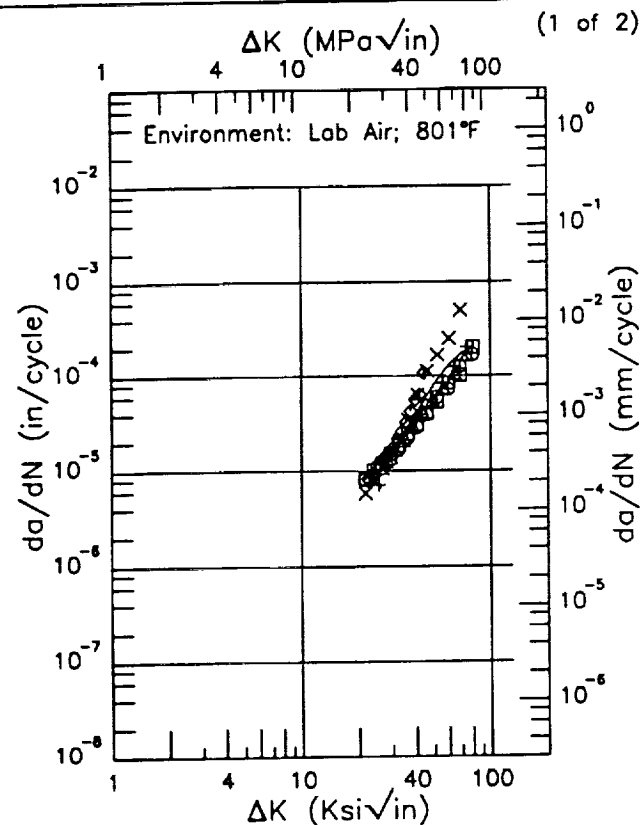
Yield Strength: 44.1 ksi

Ult. Strength: 82.2 ksi

Specimen Thk: 0.496 - 0.503 in.

Specimen Width: 2.5 in.

Ref: EPNRL



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
21.44 (min)	7.01
25.	9.82
30.	16.3
35.	26.5
40.	40.7
50.	81.0
60.	130.
70.	174.
80.	202.
80.26 (max)	202.

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
16.64 (min)	11.2
20.	21.9
25.	37.5
30.	49.5
35.	57.6
40.	65.6
50.	114.
60.	306.
70.	741.
80.	1727.
85.39 (max)	3633.

RMS %  
Error  
38.21

Life Prediction Ratio Summary  
0. .5 .8 1.25 2.

RMS %  
Error  
>100.0

Life Prediction Ratio Summary  
0. .5 .8 1.25 2.



F | 316L |

Condition/Ht: AGED

Form:

Specimen Type: Cantilever SG

Orientation:

Stress Ratio: 0.

Environment: LAB AIR; 1099.°F

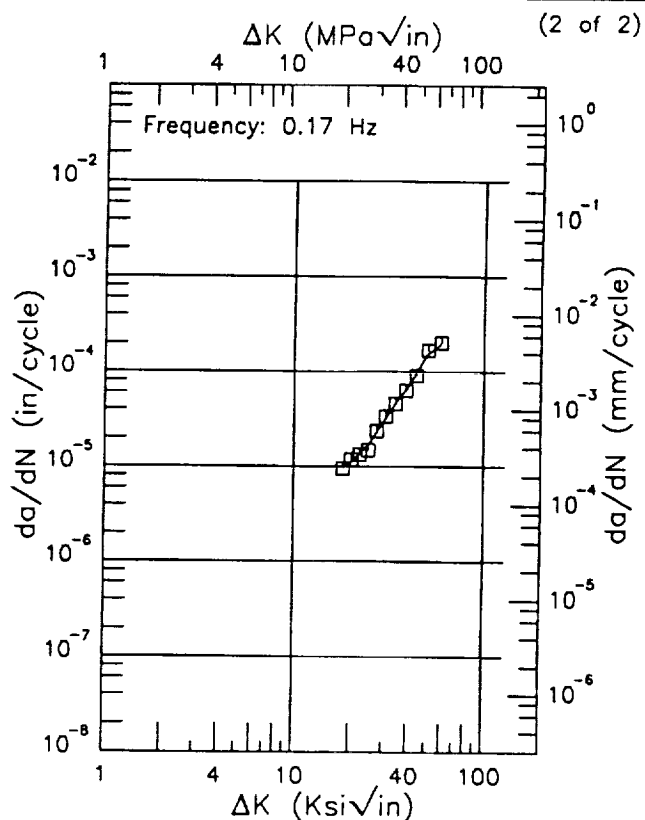
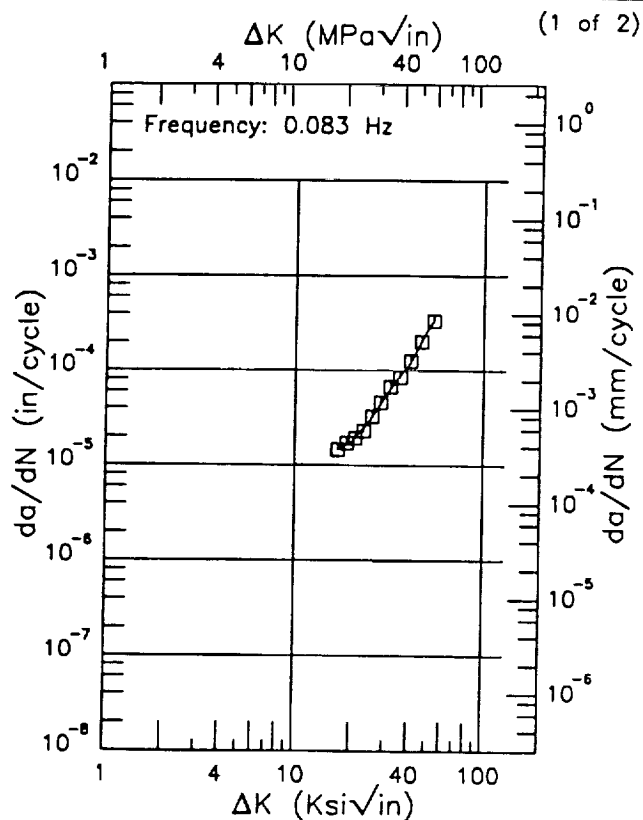
Yield Strength:

Ult. Strength:

Specimen Thk: 0.491 - 0.5 in.

Specimen Width: 2.5 - 2.502 in.

Ref: EPNRL



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
16.84 (min)	14.9
20.	17.8
25.	30.4
30.	53.6
35.	84.4
40.	117.
50.	275.
53.78 (max)	333.

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
18.10 (min)	10.1
20.	10.9
25.	17.4
30.	30.2
35.	48.9
40.	69.7
50.	152.
59.02 (max)	200.

RMS %  
Error  
3.97

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

RMS %  
Error  
5.89

Life Prediction Ratio Summary

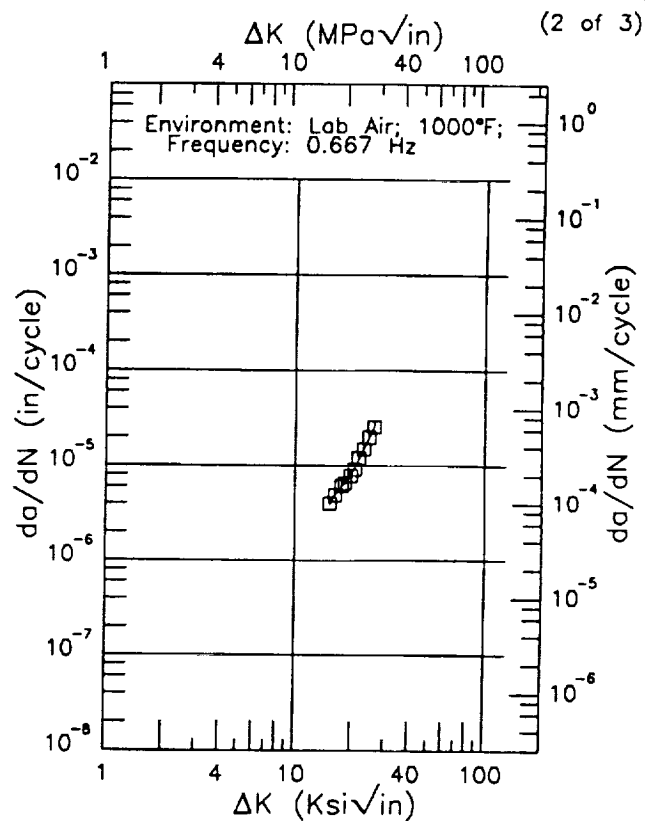
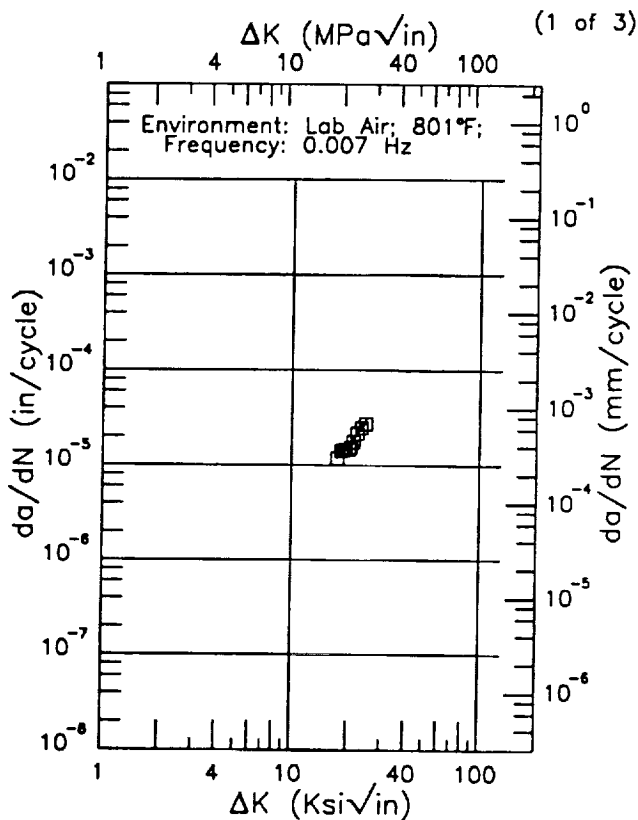
0. .5 .8 1.25 2. ---



EF 316L

Condition/Ht: ANNEALED  
Form: Plate  
Specimen Type: CT  
Orientation:  
Stress Ratio: 0.05

Yield Strength: 42.9 - 44.1 ksi  
Ult. Strength: 81.5 - 82.1 ksi  
Specimen Thk: 0.483 - 0.525 in.  
Specimen Width: 1.499 - 2.001 in.  
Ref: EPWHS;EPWS1



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
17.41 (min)	12.7
20.	15.5
24.55 (max)	27.9

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
15.29 (min)	3.94
16.	4.69
20.	8.34
25.	21.3
26.00 (max)	25.1

RMS %  
Error  
4.80

Life Prediction Ratio Summary  
0. .5 .8 1.25 2.

RMS %  
Error  
2.19

Life Prediction Ratio Summary  
0. .5 .8 1.25 2.

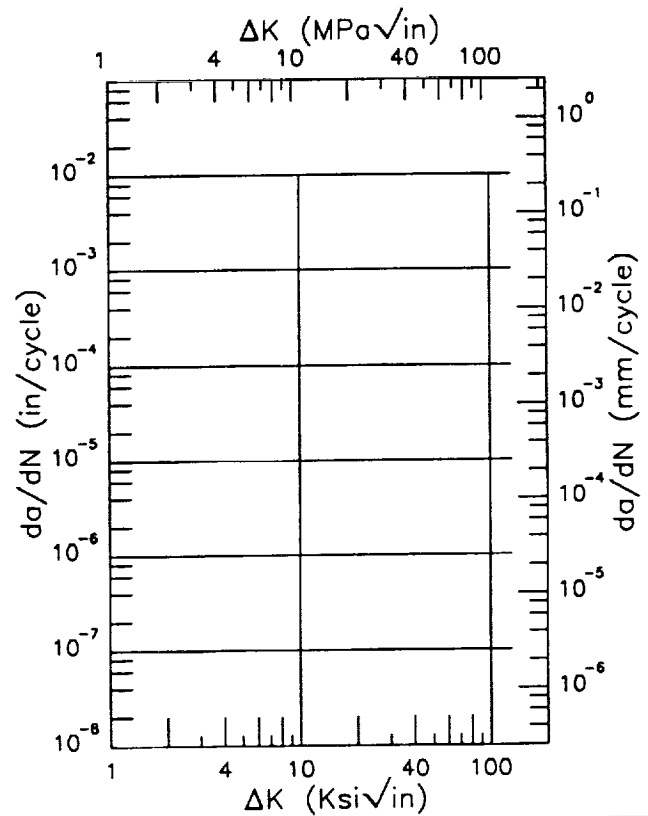
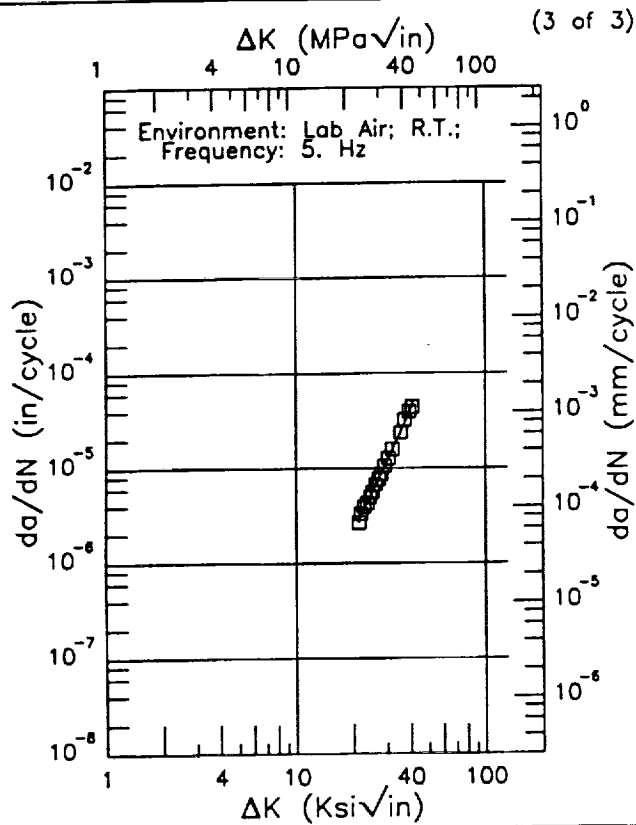
A1-99

PAGE 98 INTENTIONALLY BLANK

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Condition/Ht: ANNEALED  
Form: Plate  
Specimen Type: CT  
Orientation:  
Stress Ratio: 0.05

Yield Strength: 42.9 - 44.1 ksi  
Ult. Strength: 81.5 - 82.1 ksi  
Specimen Thk: 0.483 - 0.525 in.  
Specimen Width: 1.499 - 2.001 in.  
Ref: EPWHS;EPWS1



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
21.19 (min)	2.80
25.	5.50
30.	11.6
35.	22.9
40.	41.9
40.74 (max)	44.8

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
--------------------------------------	-------------------------------

RMS %  
Error  
2.88

Life Prediction Ratio Summary  
0. .5 .8 1.25 2.

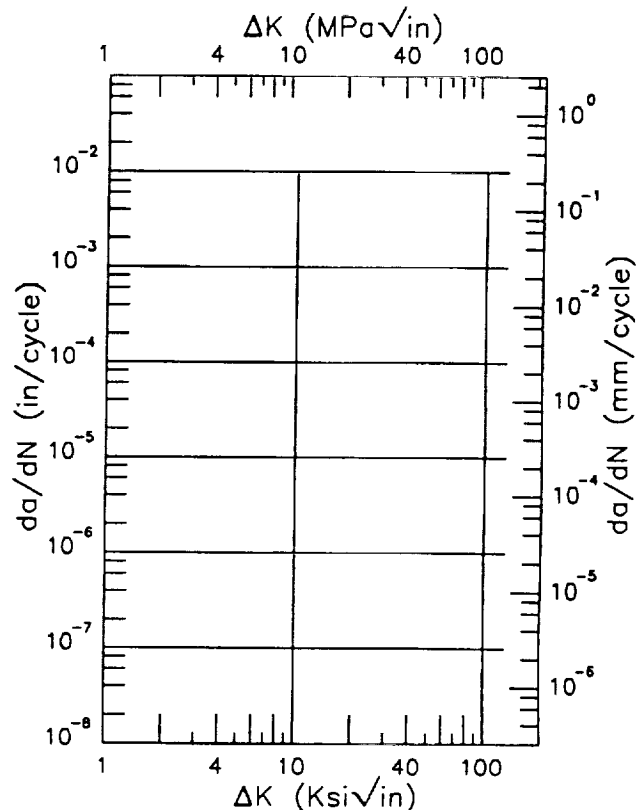
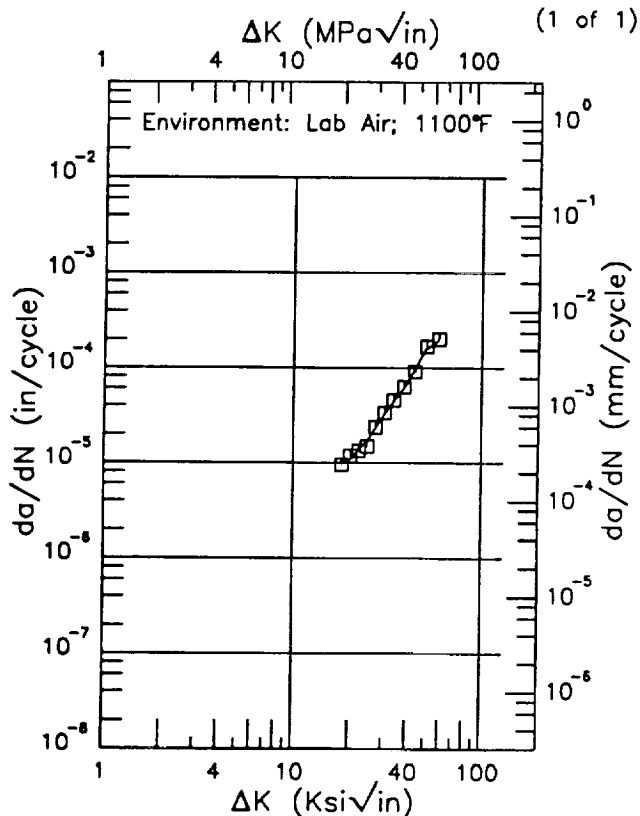
RMS %  
Error

Life Prediction Ratio Summary  
0. .5 .8 1.25 2.

E 316L

Condition/Ht: ANNEALED  
 Form: Plate  
 Specimen Type: Cantilever SG  
 Orientation:  
 Stress Ratio: 0.  
 Frequency: 0.2 Hz

Yield Strength: 44.1 ksi  
 Ult. Strength: 82.2 ksi  
 Specimen Thk: 0.491 in.  
 Specimen Width: 2.502 in.  
 Ref: EPNRL



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
17.98 (min)	10.4
20.	10.8
25.	17.9
30.	31.6
35.	48.3
40.	69.1
50.	159.
58.65 (max)	200.

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
---------------------	-------------------------------

RMS %  
 Error  
 6.00

Life Prediction Ratio Summary

0. .5 .8 1.25 2.---

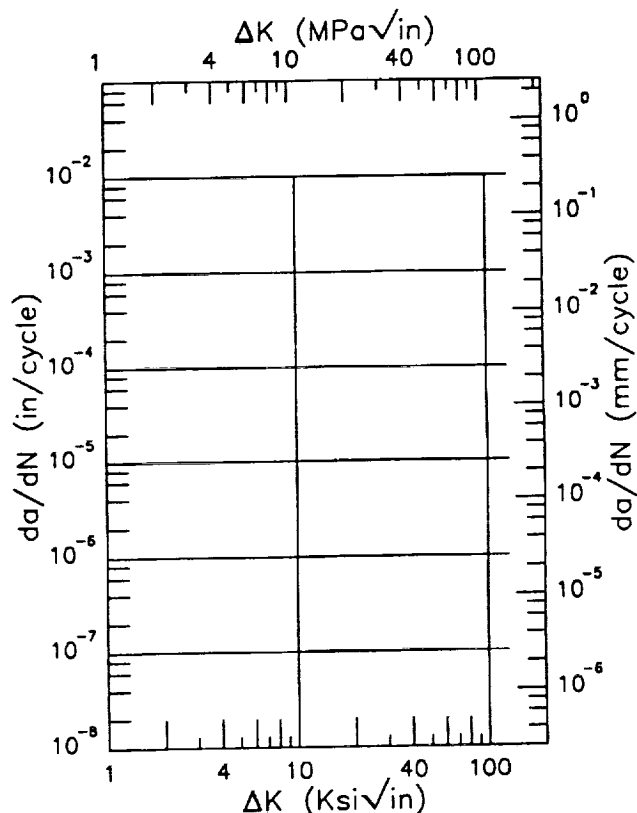
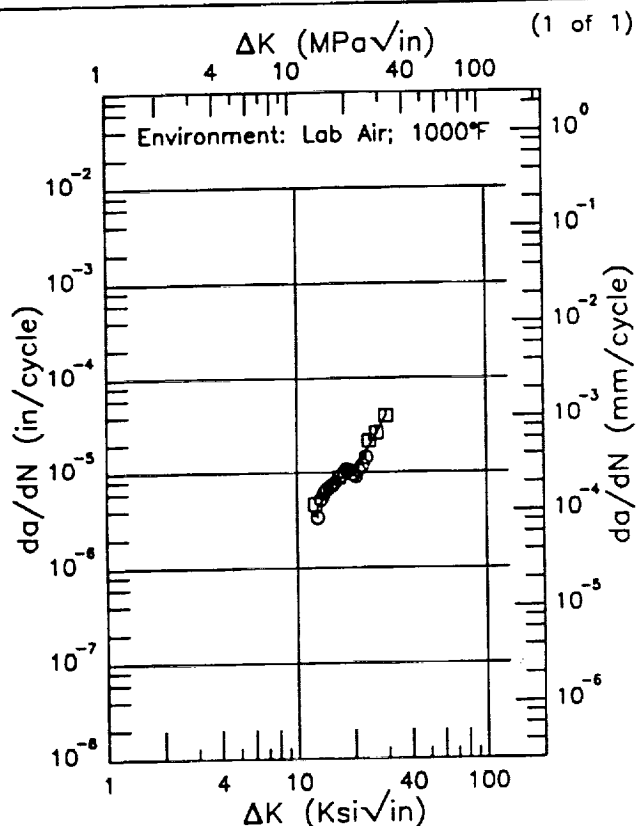
RMS %  
 Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.---

Condition/Ht: ANNEALED  
Form:  
Specimen Type: CT  
Orientation:  
Stress Ratio: 0.05  
Frequency: 0.7 Hz

Yield Strength: 44.1 ksi  
Ult. Strength: 82.1 ksi  
Specimen Thk: 0.499 - 0.501 in.  
Specimen Width: 1.998 - 1.999 in.  
Ref: EPWCS



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
12.38 (min)	3.45
13.	4.49
16.	8.24
20.	10.5
25.	21.9
29.25 (max)	39.6

$\Delta K$  (Ksi $\sqrt{\text{in}}$ )       $da/dN$  ( $10^{-6}$  in/cycle)

RMS %  
Error  
12.35

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS %  
Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

E | 316L |

Condition/Ht: ANNEALED

Form:

Specimen Type: CT

Orientation:

Stress Ratio: 0.05

Frequency: 0.7 Hz

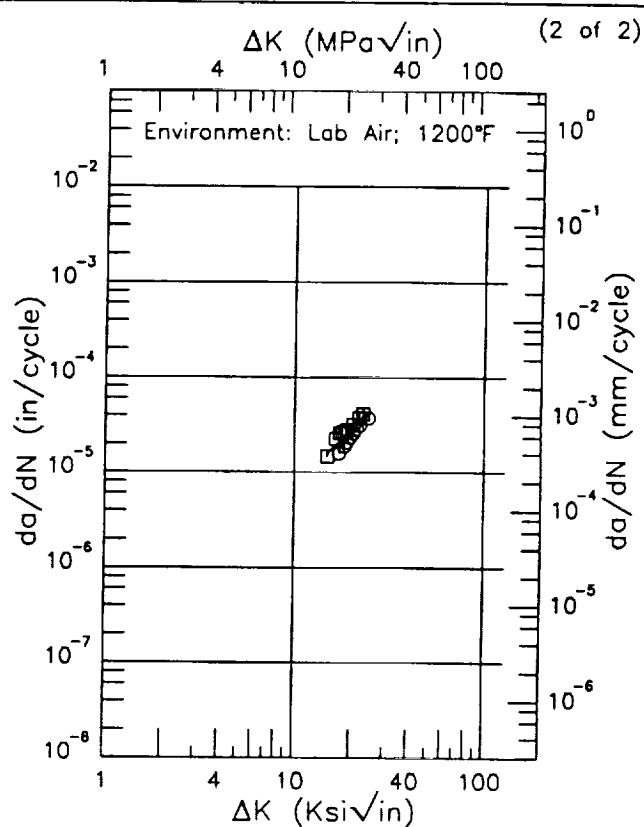
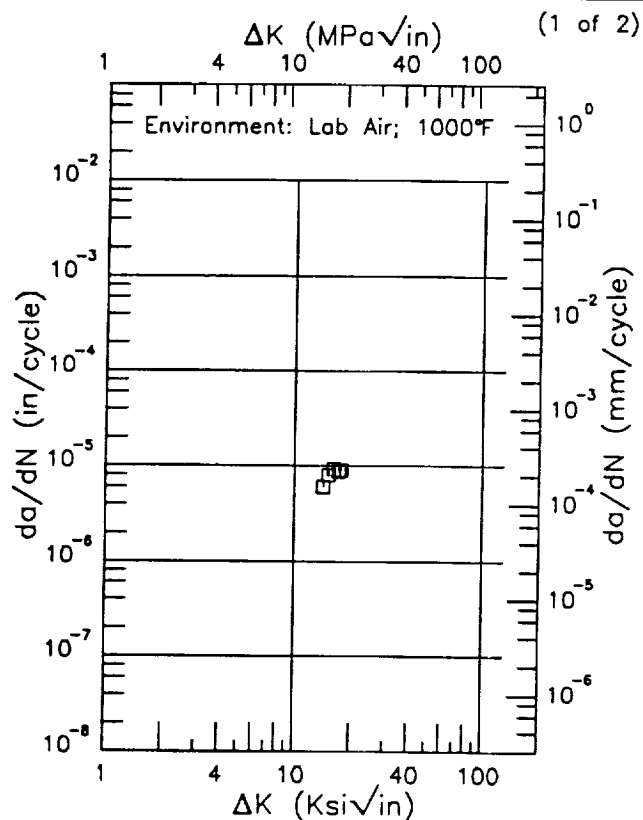
Yield Strength: 44.1 ksi

Ult. Strength: 82.1 ksi

Specimen Thk: 0.491 - 0.512 in.

Specimen Width: 1.998 - 2 in.

Ref: EPWCS



ΔK (Ksi√in)      da/dN (10<sup>-6</sup>in/cycle)

ΔK (Ksi√in)      da/dN (10<sup>-6</sup>in/cycle)

14.89 (min)	15.2
16.	18.5
20.	27.6
24.44 (max)	41.6

RMS %  
Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

RMS %  
Error

14.44

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

A1-104



R 316L

Condition/Ht: ANNEALED

Form:

Specimen Type: CT

Orientation:

Frequency: 6.7 Hz

Environment: LAB AIR;801°F

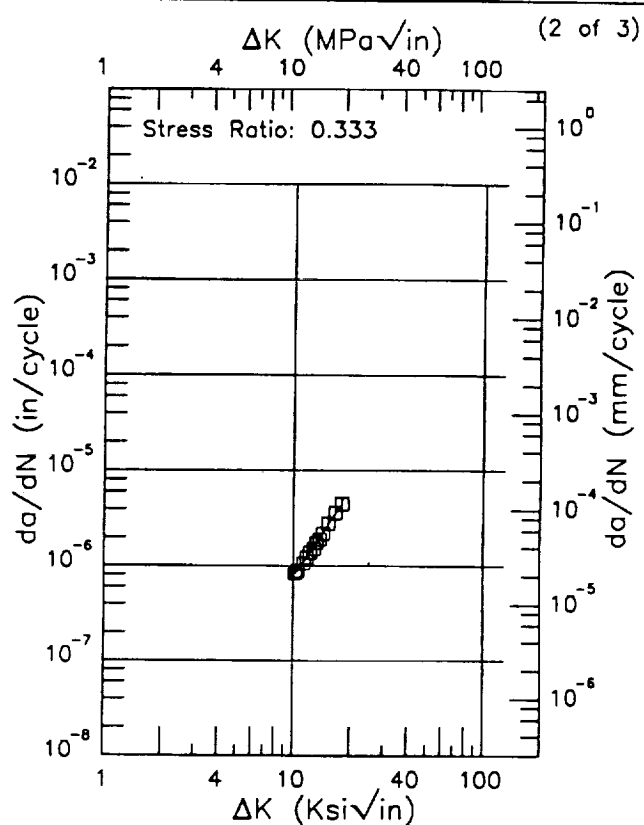
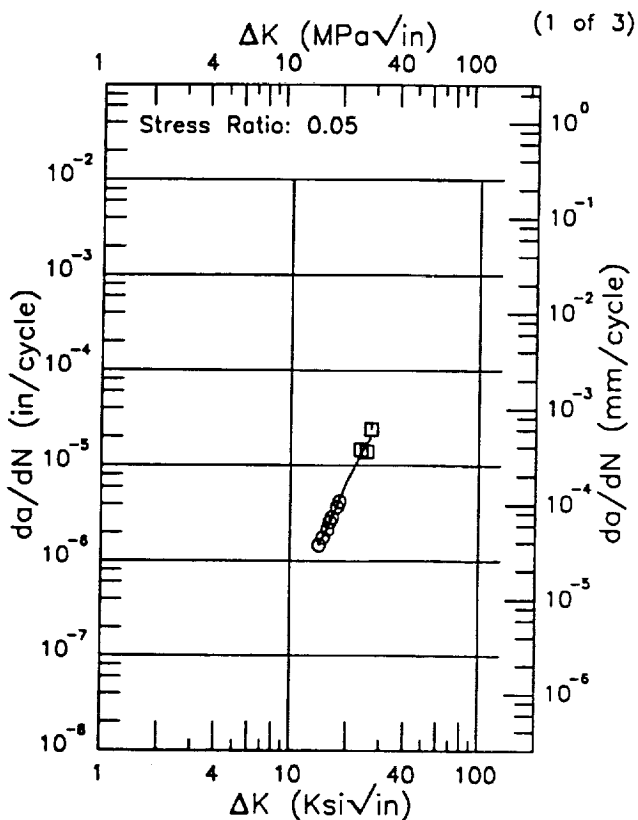
Yield Strength: 44.1 ksi

Ult. Strength: 82.1 ksi

Specimen Thk: 0.481 - 0.486 in.

Specimen Width: 1.998 - 2.001 in.

Ref: EPWHN



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
14.14 (min)	1.49
16.	2.37
20.	7.04
25.	16.9
26.47 (max)	19.0

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
10.21 (min)	0.816
13.	1.60
16.	3.17
18.03 (max)	4.43

RMS %  
Error  
10.85

Life Prediction Ratio Summary

○ □

0. .5 .8 1.25 2.

RMS %  
Error  
1.52

Life Prediction Ratio Summary

□

0. .5 .8 1.25 2.

A1-105

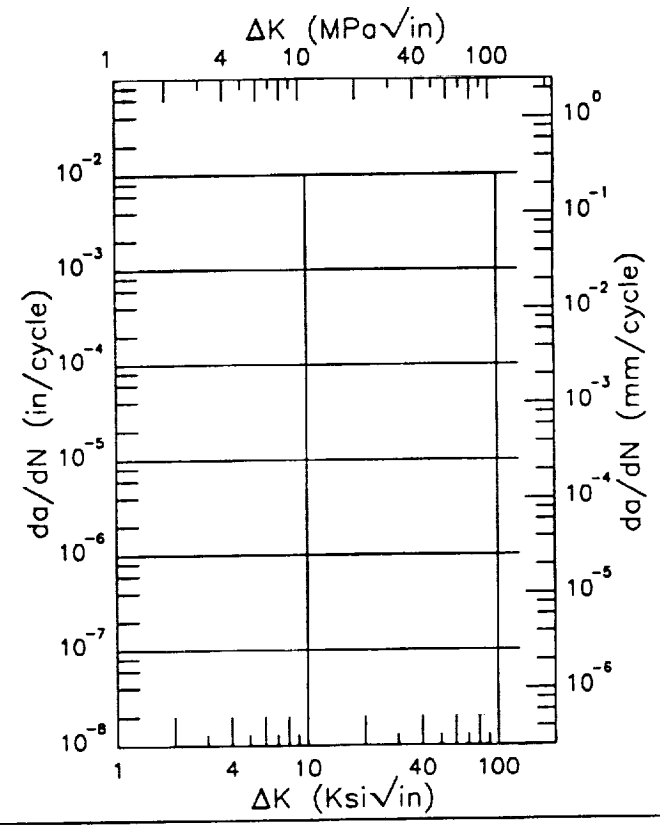
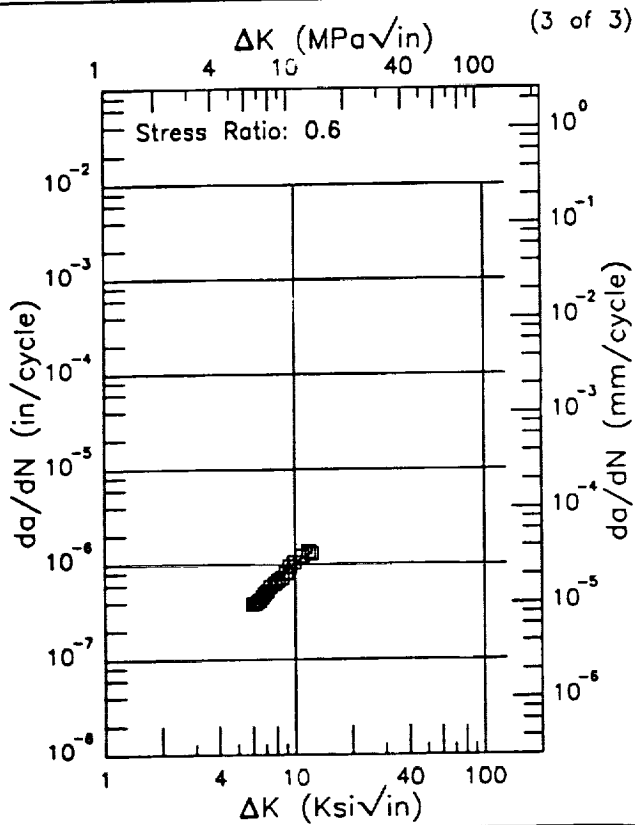
PAGE 104 INTENTIONALLY BLANK

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316L R

Condition/Ht: ANNEALED  
 Form:  
 Specimen Type: CT  
 Orientation:  
 Frequency: 6.7 Hz  
 Environment: LAB AIR;801°F

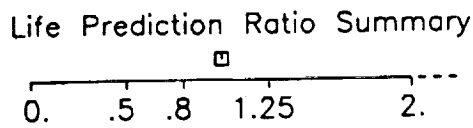
Yield Strength: 44.1 ksi  
 Ult. Strength: 82.1 ksi  
 Specimen Thk: 0.481 - 0.486 in.  
 Specimen Width: 1.998 - 2.001 in.  
 Ref: EPWHN



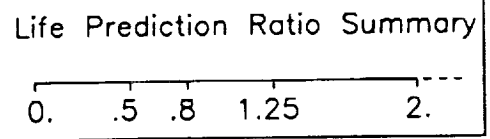
ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
5.99 (min)	0.368
6.	0.369
7.	0.501
8.	0.656
9.	0.843
10.	1.06
12.19 (max)	1.31

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
-------------	-----------------------------------

RMS %  
 Error  
 2.85



RMS %  
 Error



E | 316L |

Condition/Ht: ANNEALED

Form:

Specimen Type: CT

Orientation:

Stress Ratio: 0.05

Frequency: 0.7 Hz

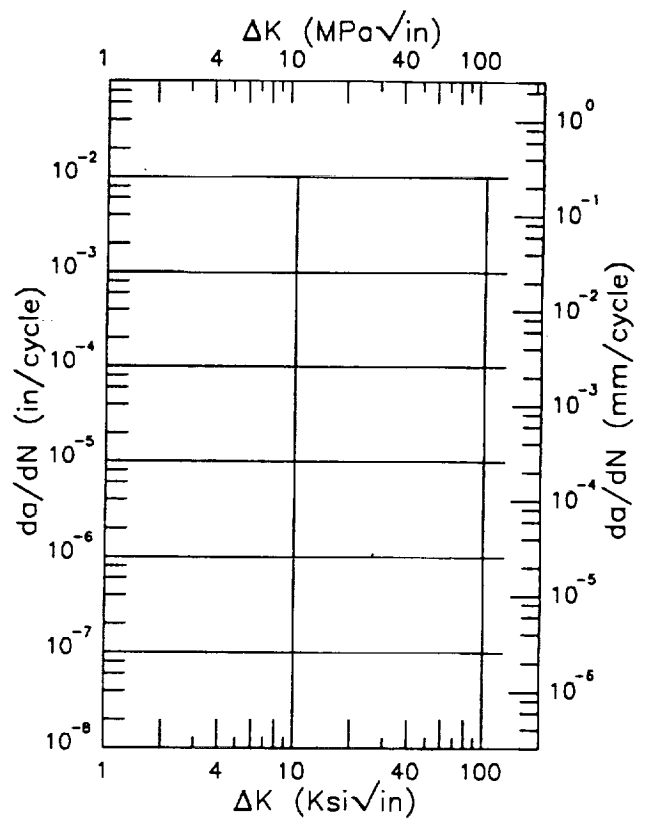
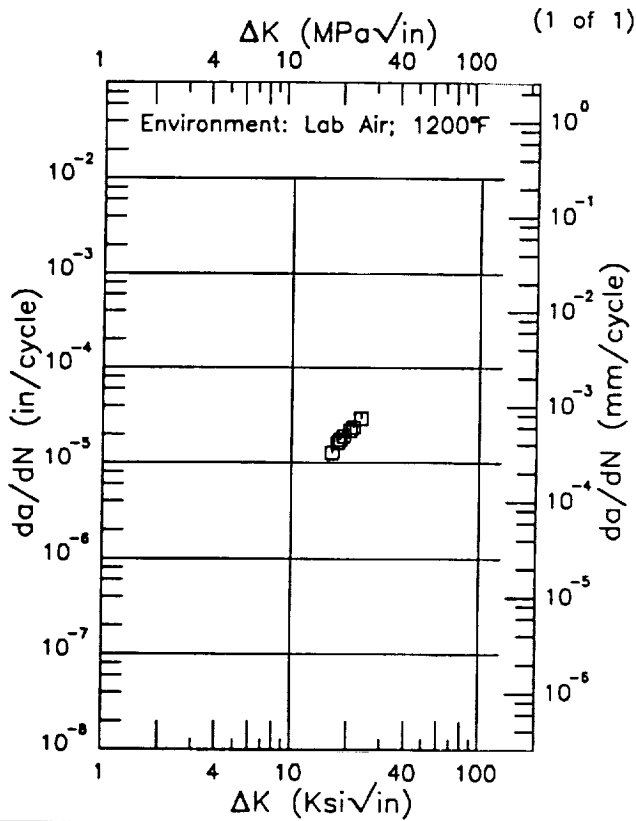
Yield Strength: 42.9 ksi

Ult. Strength: 81.5 ksi

Specimen Thk: 0.525 in.

Specimen Width: 1.502 in.

Ref: EPWS1



$\Delta K$  (Ksi $\sqrt{\text{in}}$ )       $da/dN$  ( $10^{-6}$  in/cycle)

$\Delta K$  (Ksi $\sqrt{\text{in}}$ )       $da/dN$  ( $10^{-6}$  in/cycle)

RMS %  
Error

Life Prediction Ratio Summary

0.   .5   .8   1.25   2. ---

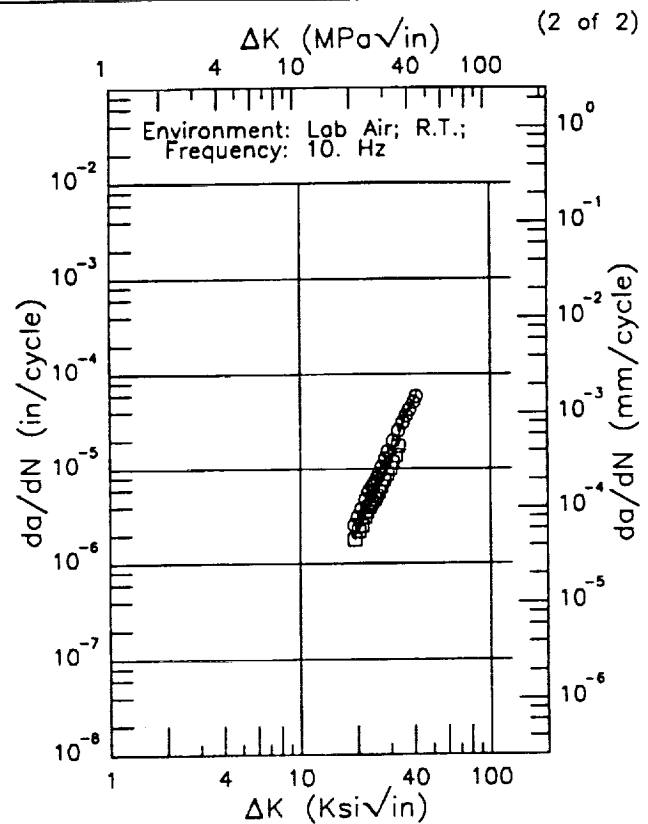
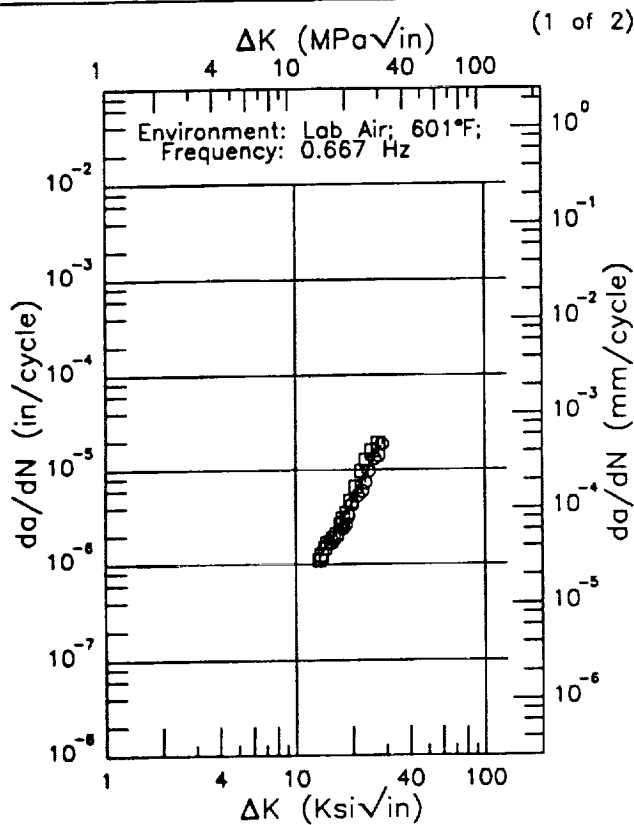
RMS %  
Error

Life Prediction Ratio Summary

0.   .5   .8   1.25   2. ---

Condition/Ht: ANNEALED  
Form:  
Specimen Type: CT  
Orientation:  
Stress Ratio: 0.05

Yield Strength: 44.1 ksi  
Ult. Strength: 82.1 ksi  
Specimen Thk: 0.494 - 0.504 in.  
Specimen Width: 1.998 - 2 in.  
Ref: EPWCS



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
13.24 (min)	1.18
16.	2.02
20.	4.62
25.	12.7
28.37 (max)	17.9

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
19.10 (min)	2.10
20.	2.42
25.	6.45
30.	12.7
35.	31.5
40.	53.9
40.56 (max)	56.4

RMS %  
Error  
14.66

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS %  
Error  
21.28

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

E | 316L |

Condition/Ht: ANNEALED

Form:

Specimen Type: CB

Orientation:

Stress Ratio: 0.

Frequency: 0.2 Hz

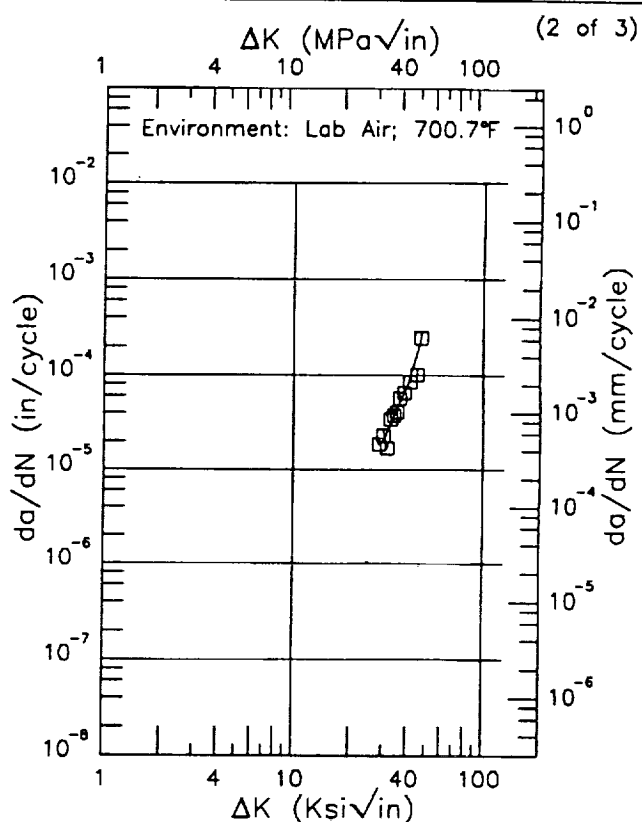
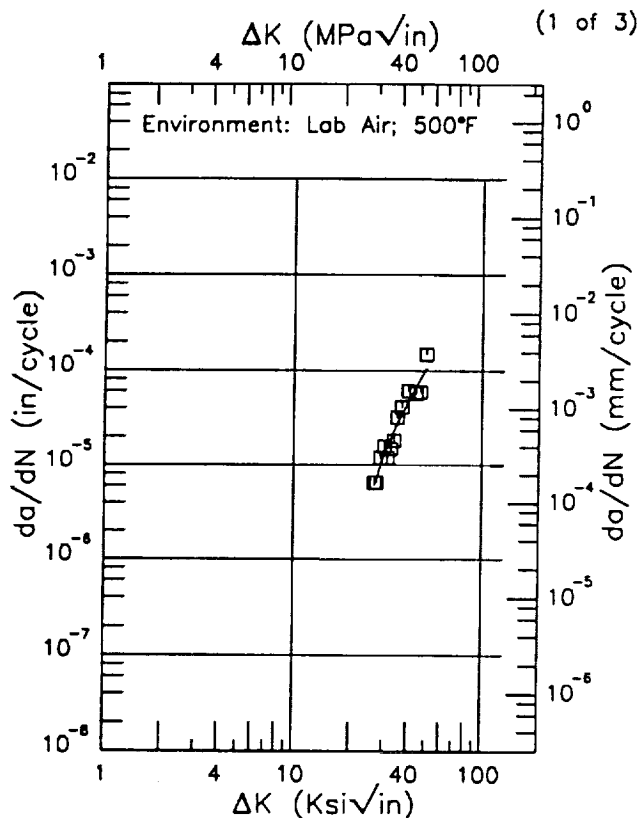
Yield Strength: 44.1 ksi

Ult. Strength: 82.2 ksi

Specimen Thk: 0.448 - 0.451 in.

Specimen Width: 2.492 - 2.54 in.

Ref: EPNRL



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
26.74 (min)	6.08
30.	12.8
35.	27.3
40.	46.2
50.	104.
50.23 (max)	106.

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
28.13 (min)	19.2
30.	20.2
35.	43.8
40.	77.9
47.02 (max)	242.

RMS %  
Error  
22.57

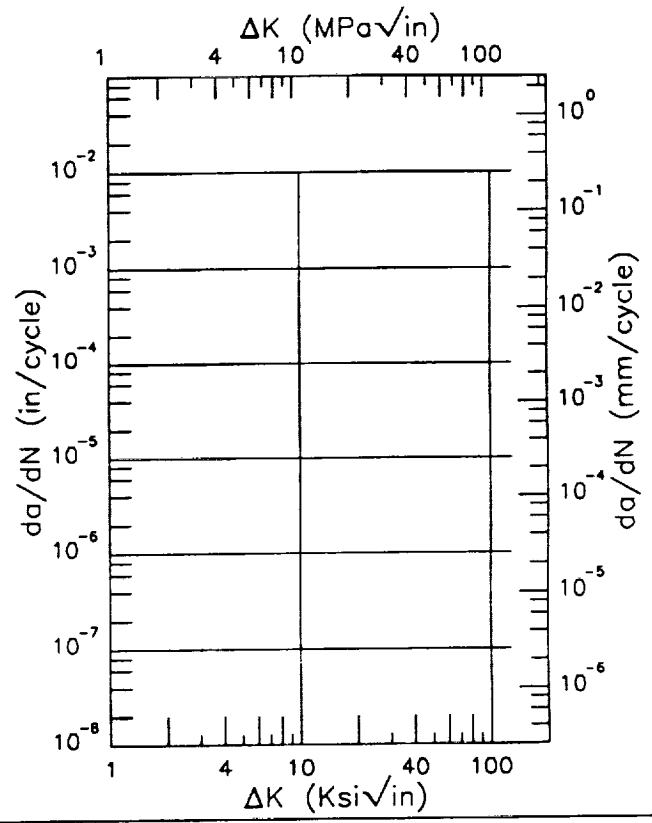
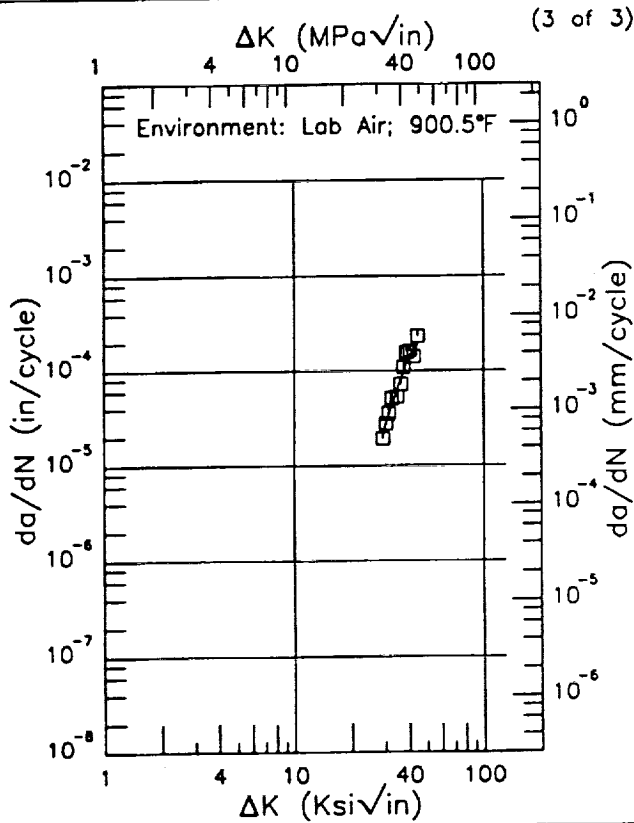
Life Prediction Ratio Summary  
0. .5 .8 1.25 2.---

RMS %  
Error  
17.21

Life Prediction Ratio Summary  
0. .5 .8 1.25 2.---

Condition/Ht: ANNEALED  
 Form:  
 Specimen Type: CB  
 Orientation:  
 Stress Ratio: 0.  
 Frequency: 0.2 Hz

Yield Strength: 44.1 ksi  
 Ult. Strength: 82.2 ksi  
 Specimen Thk: 0.448 - 0.451 in.  
 Specimen Width: 2.492 - 2.54 in.  
 Ref: EPNRL

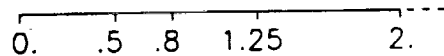


$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
29.11 (min)	20.2
30.	25.8
35.	67.2
40.	142.
44.65 (max)	199.

$\Delta K$  (Ksi $\sqrt{\text{in}}$ )       $da/dN$  ( $10^{-6}$  in/cycle)

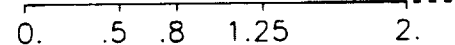
RMS %  
 Error  
 15.80

Life Prediction Ratio Summary



RMS %  
 Error

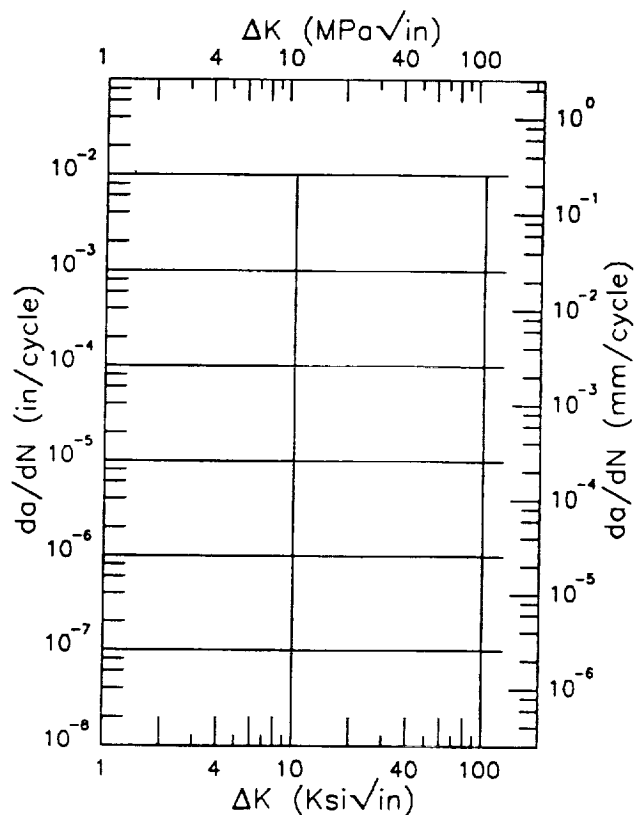
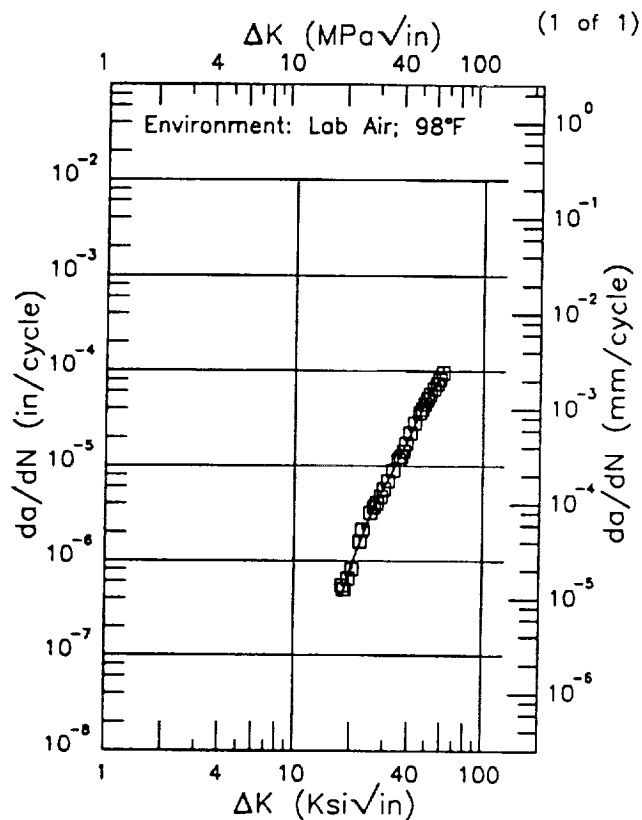
Life Prediction Ratio Summary



E | 316L |

Condition/Ht: ANNEALED  
 Form:  
 Specimen Type: SENT  
 Orientation:  
 Stress Ratio: 0.04  
 Frequency: 0.9 Hz

Yield Strength: 44.1 ksi  
 Ult. Strength: 82.1 ksi  
 Specimen Thk: 0.504 in.  
 Specimen Width: 4.5 in.  
 Ref: EPWCS



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
17.90 (min)	0.418
20.	0.885
25.	2.88
30.	6.20
35.	11.3
40.	19.6
50.	50.8
60.	85.6
60.52 (max)	86.8

$\Delta K$  (Ksi $\sqrt{\text{in}}$ )      da/dN (10<sup>-6</sup>in/cycle)

RMS %  
 Error  
 7.89

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS %  
 Error

Life Prediction Ratio Summary

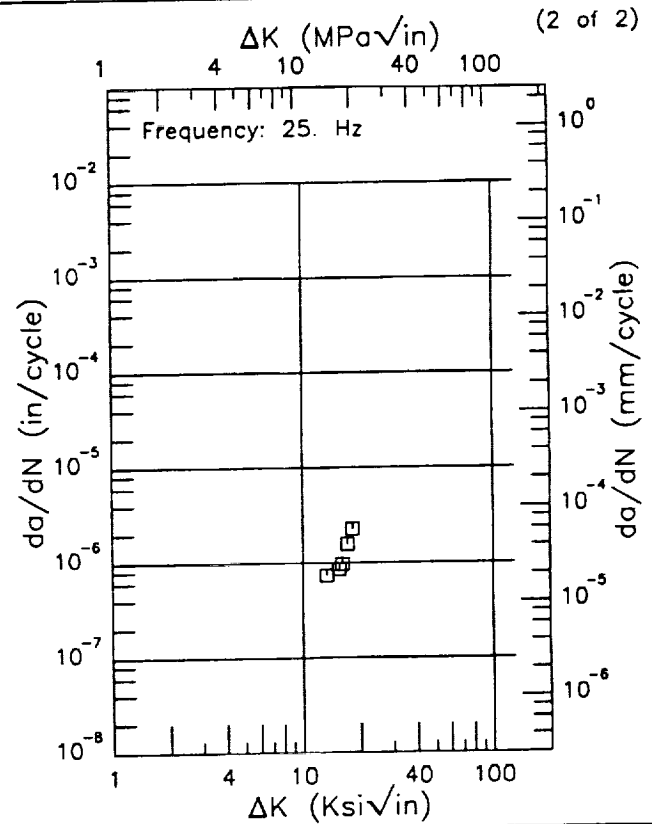
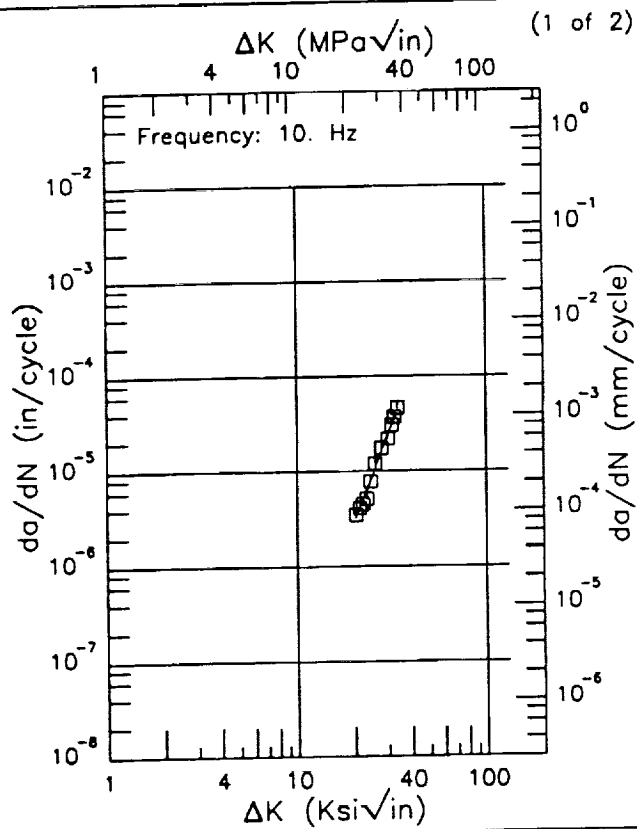
0. .5 .8 1.25 2.

316L

F

Condition/Ht: ANNEALED  
 Form:  
 Specimen Type: SENT  
 Orientation:  
 Stress Ratio: 0.05  
 Environment: LAB AIR;801°F

Yield Strength:  
 Ult. Strength:  
 Specimen Thk: 0.093 in.  
 Specimen Width: 2.001 in.  
 Ref: EPJAM

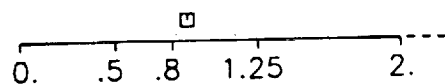


$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
20.24 (min)	3.26
25	8.95
30	24.4
33.71 (max)	41.0

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
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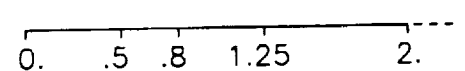
RMS %  
 Error  
 9.54

Life Prediction Ratio Summary



RMS %  
 Error

Life Prediction Ratio Summary

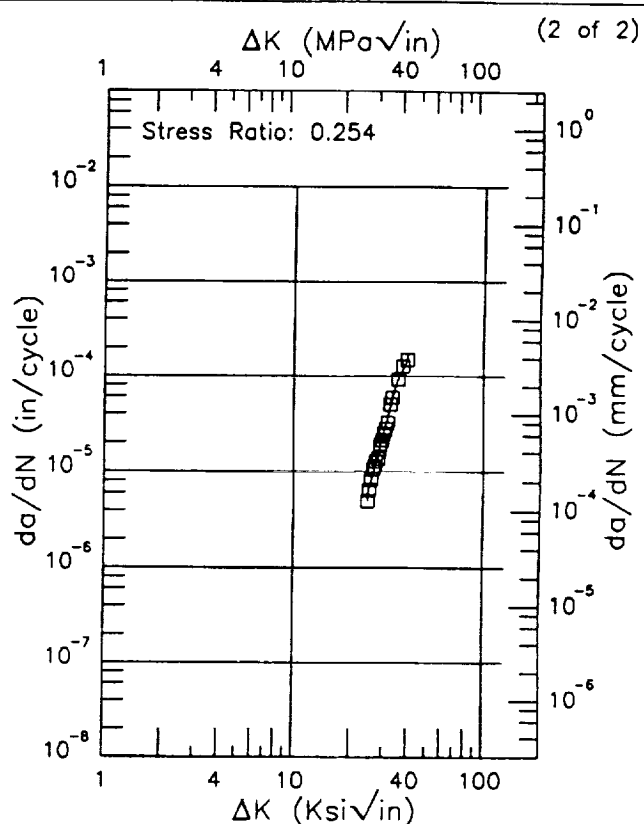
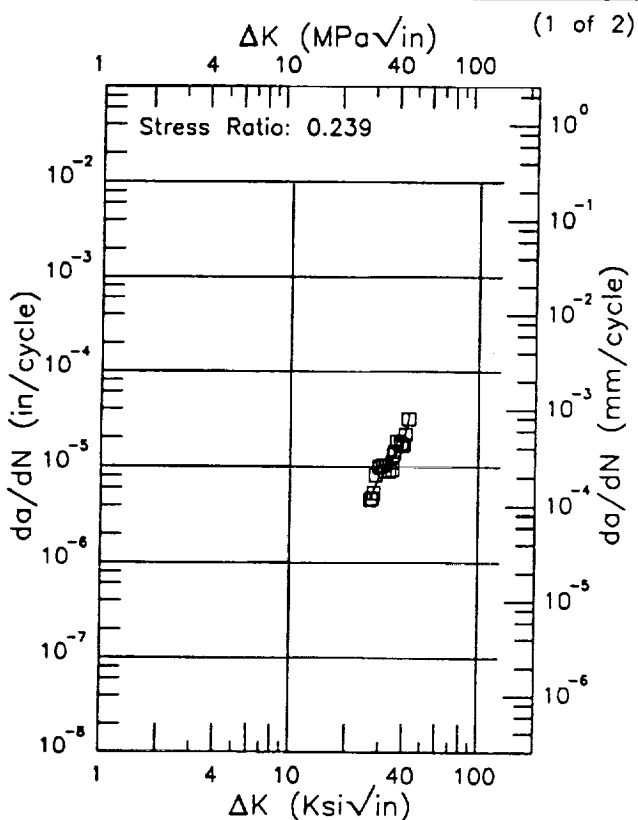




R | 316L |

Condition/Ht: ANNEALED AT 1051(C) FOR  
 Form: Forging  
 Specimen Type: CT  
 Orientation:  
 Frequency: 1 Hz  
 Environment: PWR WATER;550°F

Yield Strength: 23.9 ksi  
 Ult. Strength: 65.5 ksi  
 Specimen Thk: 2 in.  
 Specimen Width: 5.11 in.  
 Ref: EPWHS



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
26.59 (min)	4.67
30.	8.95
35.	12.2
40.	20.3
42.28 (max)	31.4

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
24.56 (min)	5.72
25.	6.64
30.	26.3
35.	87.3
39.26 (max)	145.

RMS %  
 Error  
 14.36

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

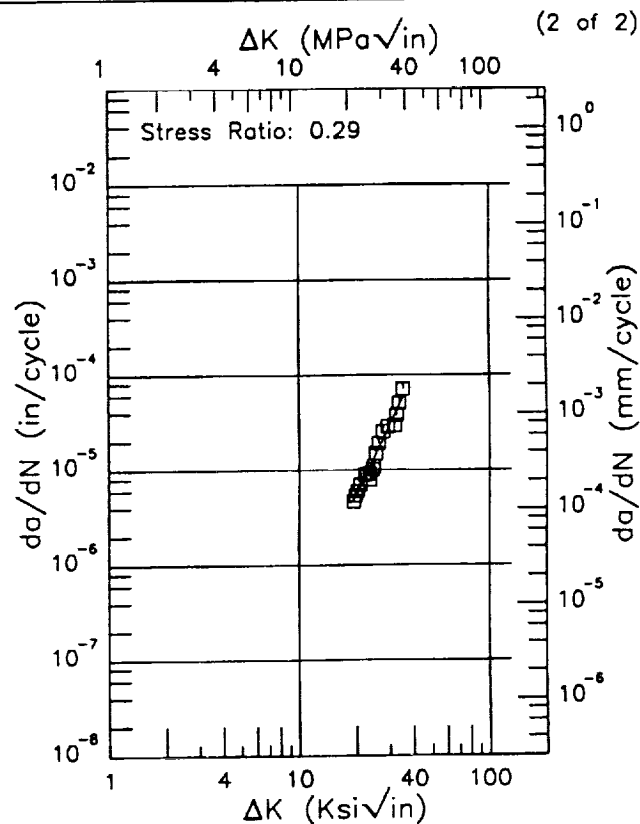
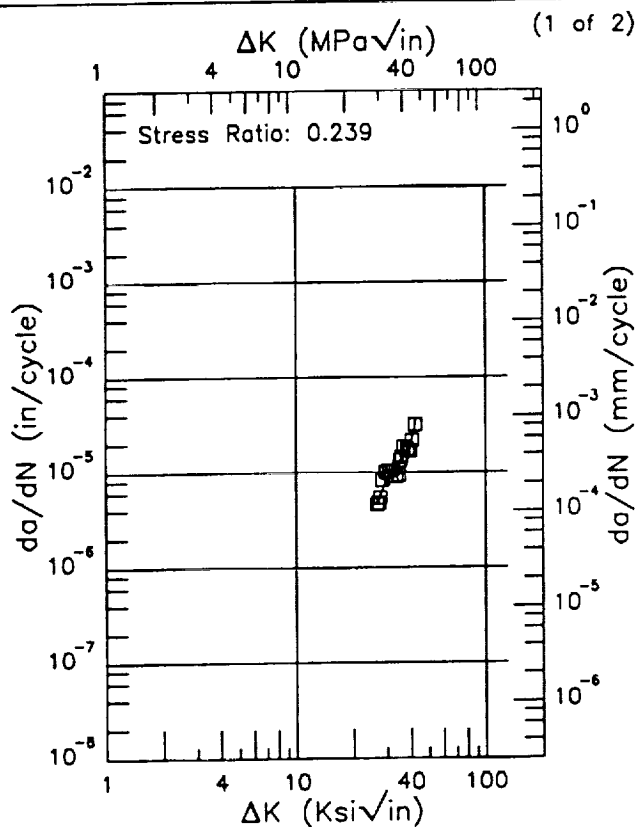
RMS %  
 Error  
 6.63

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

Condition/Ht: ANNEALED AT 1051(C) FOR  
 Form: Forging  
 Specimen Type: CT  
 Orientation:  
 Frequency: 10 Hz  
 Environment: PWR WATER;550°F

Yield Strength: 23.9 ksi  
 Ult. Strength: 65.5 ksi  
 Specimen Thk: 2 in.  
 Specimen Width: 5.11 in.  
 Ref: EPWHS



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
26.59 (min)	4.67
30.	8.95
35.	12.2
40.	20.3
42.28 (max)	31.4

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
19.29 (min)	4.84
20.	5.57
25.	13.9
30.	30.0
35.	56.7
35.05 (max)	57.0

RMS %  
 Error  
 14.36

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS %  
 Error  
 13.70

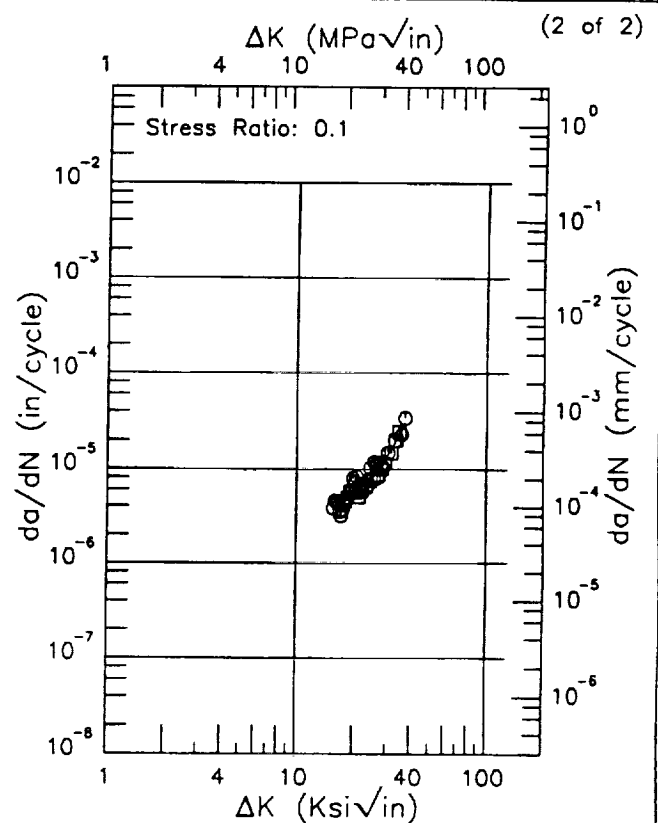
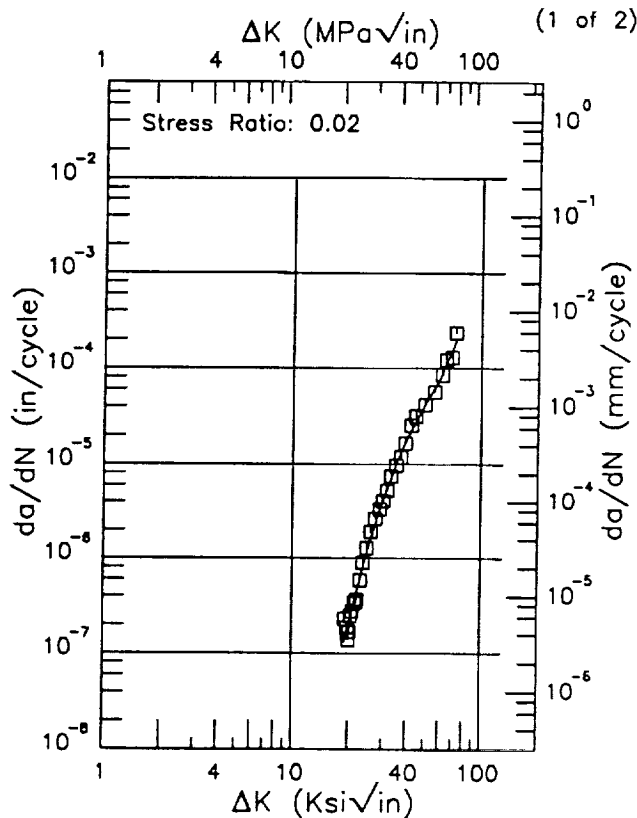
Life Prediction Ratio Summary

0. .5 .8 1.25 2.

R | 316L |

Condition/Ht: -99  
Form:  
Specimen Type: CT  
Orientation:  
Frequency: 10 Hz  
Environment: LAB AIR; RT

Yield Strength: 40.6 - 67.4 ksi  
Ult. Strength: 75.1 - 78.8 ksi  
Specimen Thk: 0.984 in.  
Specimen Width: 1.969 in.  
Ref: EPBER



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
18.96 (min)	0.130
20.	0.209
25.	1.24
30.	4.18
35.	9.88
40.	18.5
50.	41.8
60.	77.1
70.	158.
72.74 (max)	199.

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
15.56 (min)	4.14
16.	4.00
20.	5.74
25.	8.24
30.	13.4
35.	23.8
37.01 (max)	30.9

RMS %  
Error  
21.08

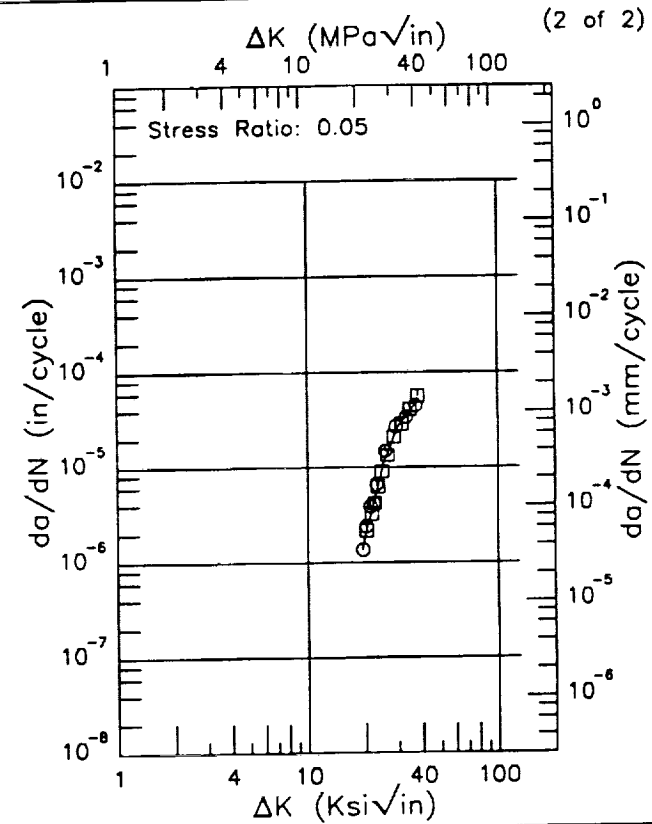
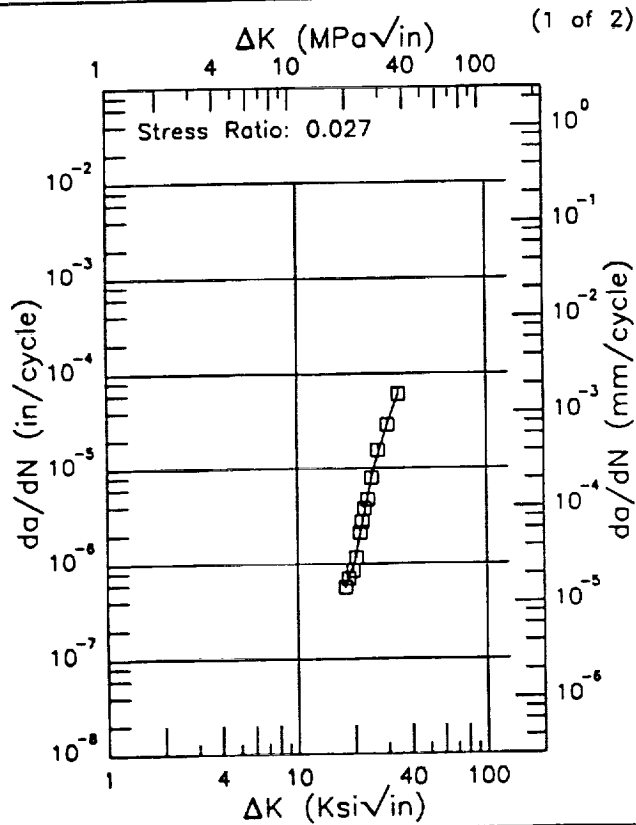
Life Prediction Ratio Summary  
□  
0. .5 .8 1.25 2. ---

RMS %  
Error  
15.63

Life Prediction Ratio Summary  
□□  
0. .5 .8 1.25 2. ---

Condition/Ht: -99  
 Form:  
 Specimen Type: CT  
 Orientation:  
 Frequency: 10 Hz  
 Environment: LAB AIR;608°F

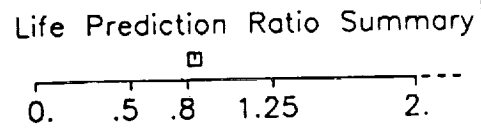
Yield Strength: 40.6 ksi  
 Ult. Strength: 75.1 ksi  
 Specimen Thk: 0.984 in.  
 Specimen Width: 1.969 in.  
 Ref: EPBER



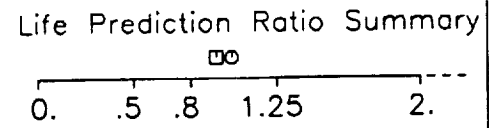
$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
17.71 (min)	0.569
20.	1.08
25.	9.38
30.	30.1
34.01 (max)	60.3

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
19.36 (min)	1.47
20.	1.93
25.	10.8
30.	27.0
35.	39.7
38.03 (max)	53.0

RMS %  
 Error  
 7.03



RMS %  
 Error  
 11.17



E | 316L |

Condition/Ht: -99

Form:

Specimen Type: CT

Orientation:

Stress Ratio: 0.03

Frequency: 10 Hz

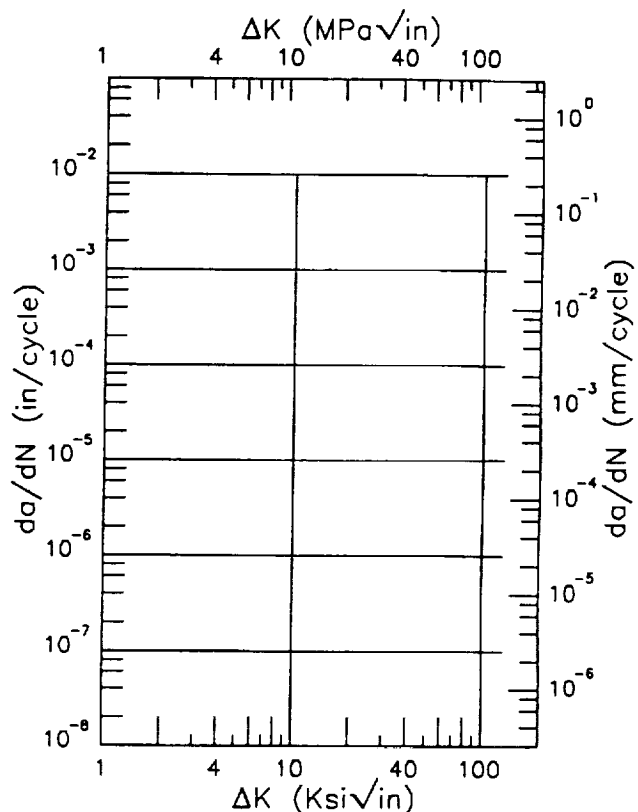
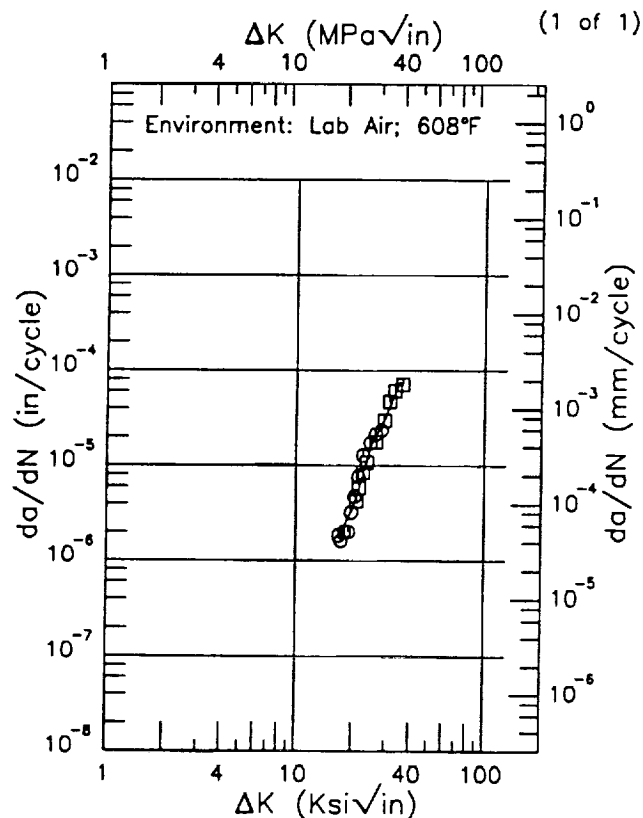
Yield Strength: 40.6 ksi

Ult. Strength: 75.1 ksi

Specimen Thk: 0.787 in.

Specimen Width: 1.575 in.

Ref: EPBER



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
16.75 (min)	1.73
20.	3.56
25.	16.6
30.	34.3
35.	75.7
36.31 (max)	70.2

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
--------------------------------------	-----------------------------------

RMS %  
Error  
20.46

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS %  
Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

Condition/Ht: -99

Form:

Specimen Type: CT

Orientation:

Stress Ratio: 0.05

Frequency: 0.7 Hz

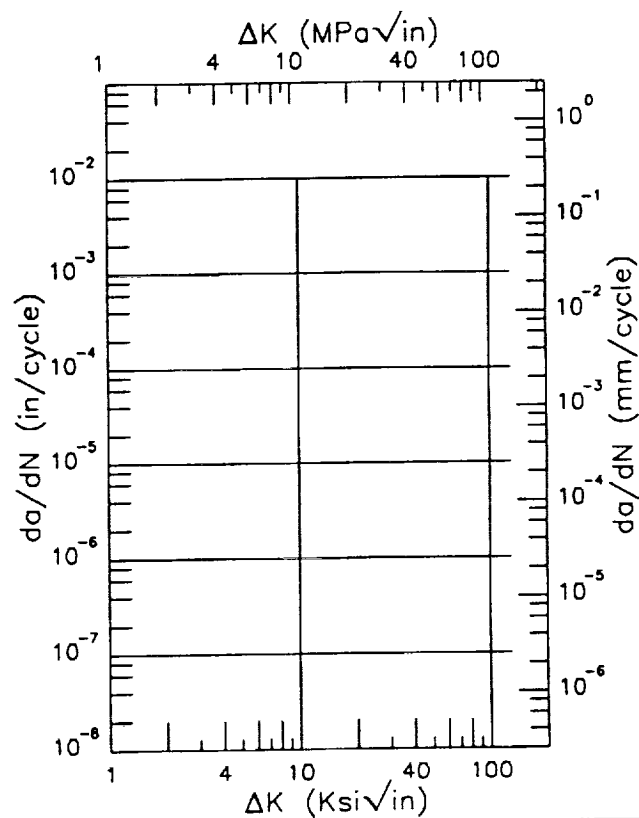
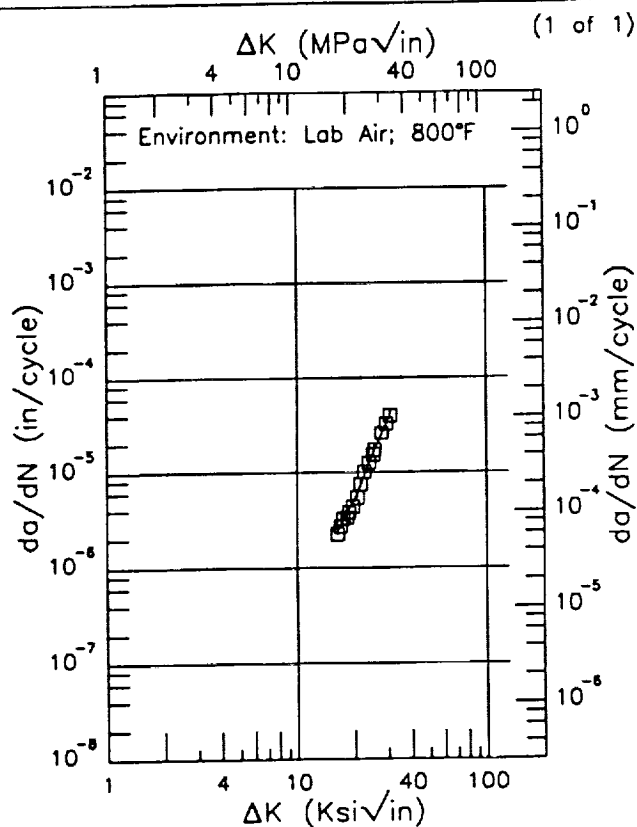
Yield Strength: 19 ksi

Ult. Strength: 67.2 ksi

Specimen Thk: 0.486 in.

Specimen Width: 2.047 in.

Ref: EPWHS



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
16.21 (min)	2.45
20.	5.08
25.	15.9
30.	35.4
30.70 (max)	39.5

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
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RMS %  
Error  
5.69

Life Prediction Ratio Summary  

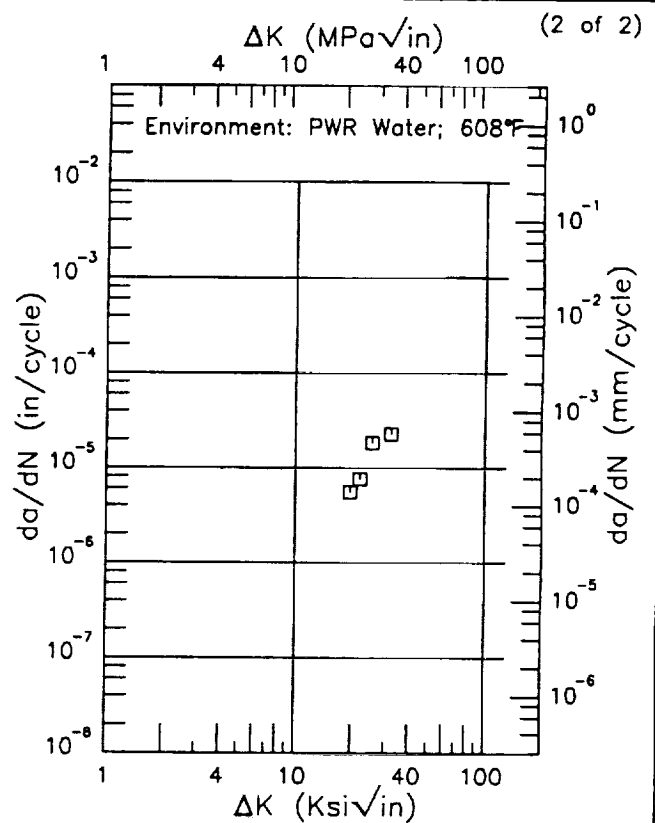
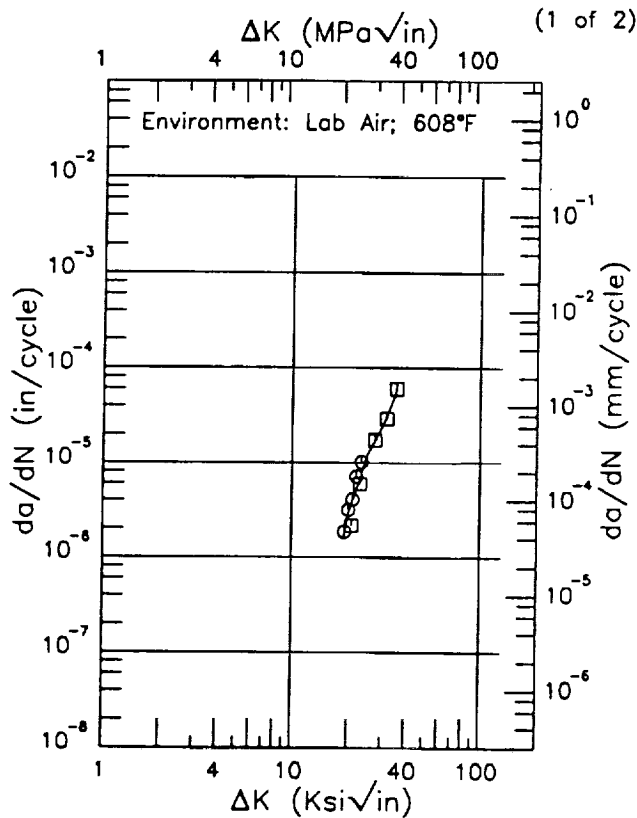
RMS %  
Error

Life Prediction Ratio Summary

E 316L

Condition/Ht: -99  
 Form:  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.05  
 Frequency: 0.1 Hz

Yield Strength: 40.6 ksi  
 Ult. Strength: 75.1 ksi  
 Specimen Thk: 0.787 in.  
 Specimen Width: 1.575 in.  
 Ref: EPBER



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
18.95 (min)	1.63
20.	2.91
25.	12.2
30.	24.0
35.	52.8
35.55 (max)	58.8

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
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RMS %  
 Error  
 21.38

Life Prediction Ratio Summary

□ ○

0. .5 .8 1.25 2.---

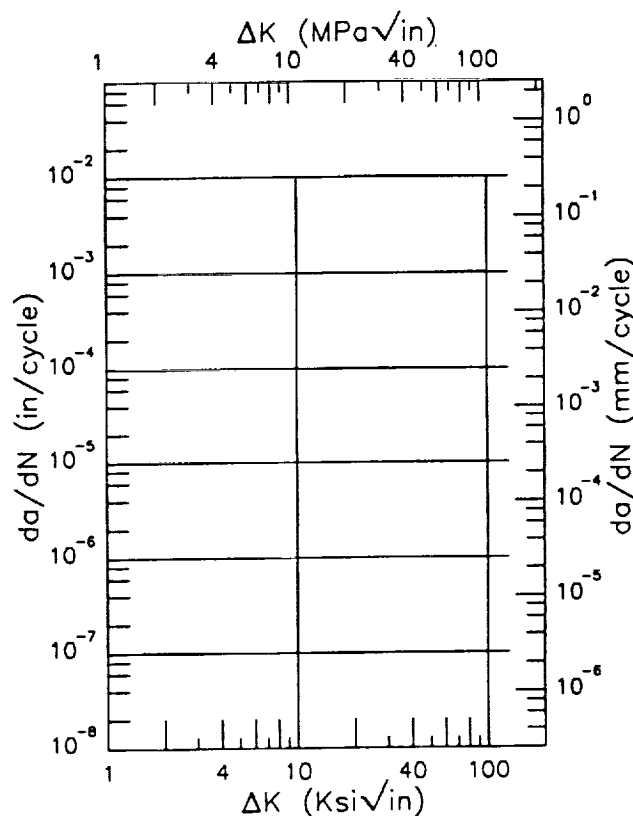
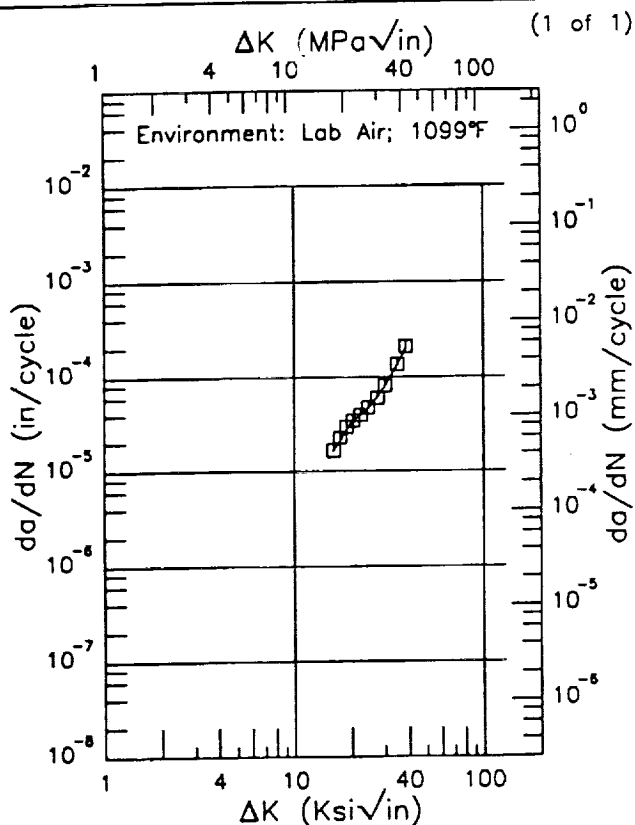
RMS %  
 Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.---

Condition/Ht: -99  
 Form:  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.09  
 Frequency: 0.2 Hz

Yield Strength: 44.1 ksi  
 Ult. Strength: 82.2 ksi  
 Specimen Thk: 0.999 in.  
 Specimen Width: 2.004 in.  
 Ref: EPNRL



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
16.04 (min)	16.2
20.	33.2
25.	48.9
30.	79.4
35.	136.
38.76 (max)	206.

$\Delta K$  (Ksi $\sqrt{\text{in}}$ ) da/dN (10<sup>-6</sup>in/cycle)

RMS %  
 Error  
 3.98

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS %  
 Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.



F 316L

Condition/Ht: -99

Form:

Specimen Type: CT

Orientation:

Stress Ratio: 0.02

Environment: LAB AIR; RT

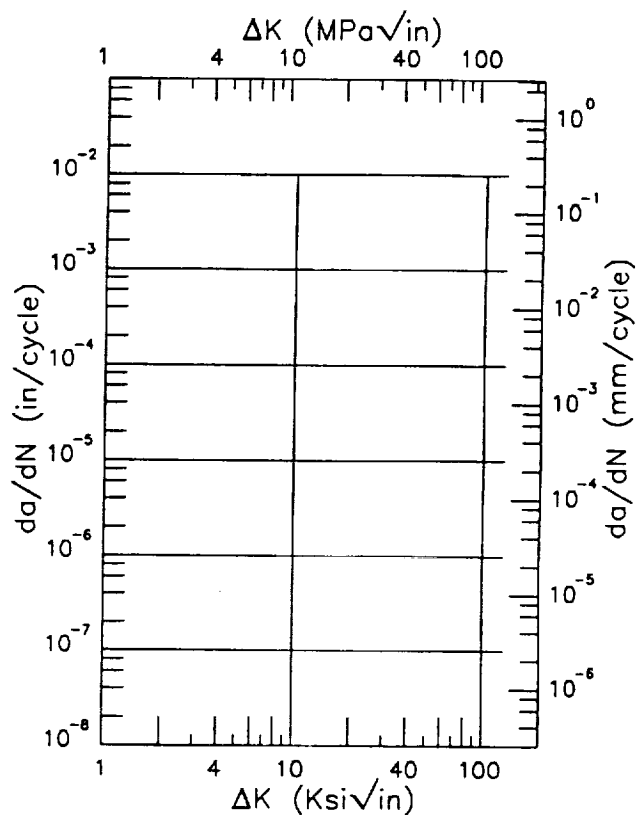
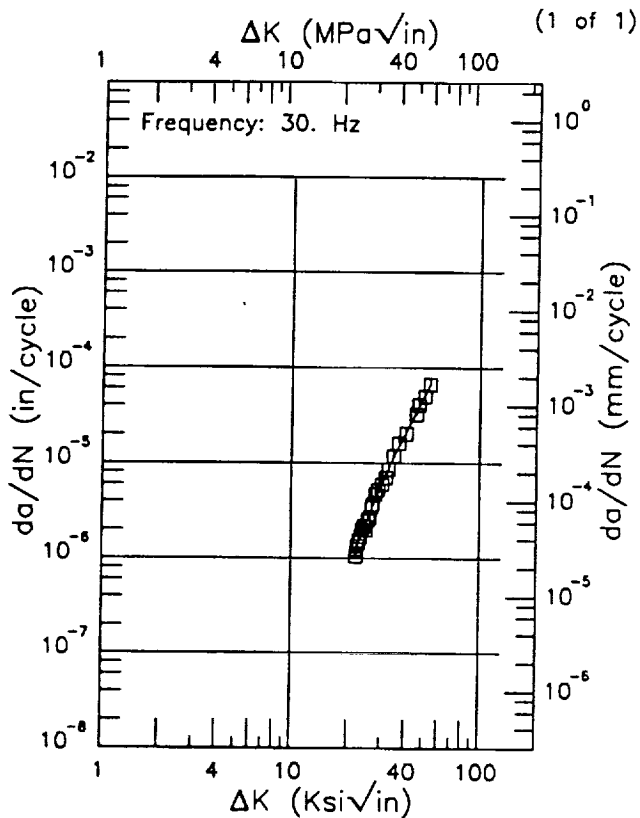
Yield Strength: 40.6 ksi

Ult. Strength: 75.1 ksi

Specimen Thk: 0.787 in.

Specimen Width: 1.575 in.

Ref: EPBER



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
22.02 (min)	1.23
25.	2.40
30.	5.95
35.	12.2
40.	20.3
50.	49.1
53.60 (max)	65.0

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
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RMS %  
Error  
7.82

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

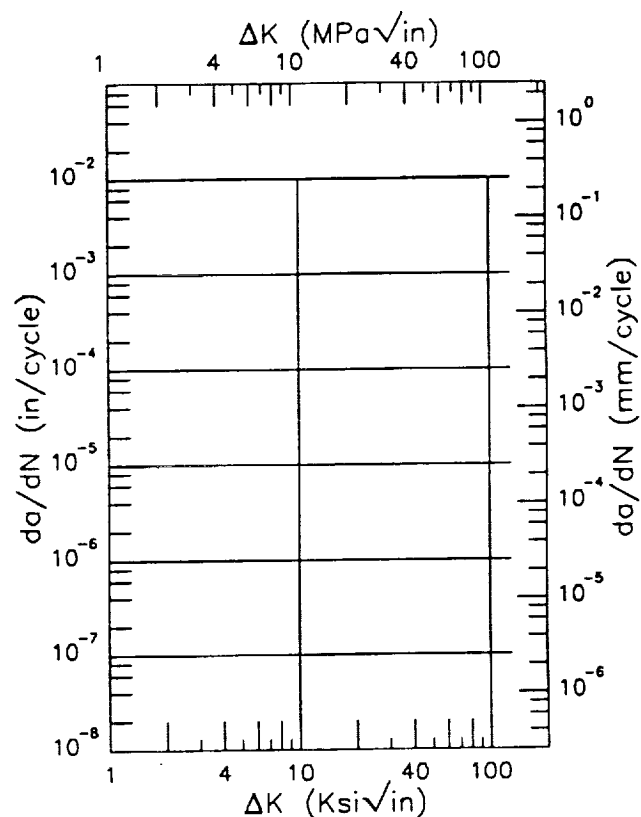
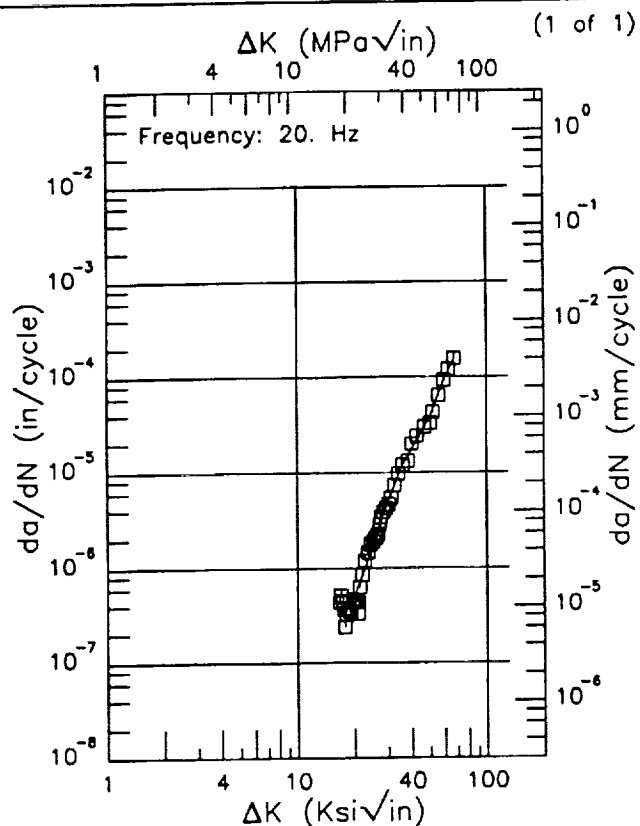
RMS %  
Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

Condition/Ht: -99  
 Form:  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.03  
 Environment: LAB AIR; RT

Yield Strength: 40.6 ksi  
 Ult. Strength: 75.1 ksi  
 Specimen Thk: 0.984 in.  
 Specimen Width: 1.969 in.  
 Ref: EPBER

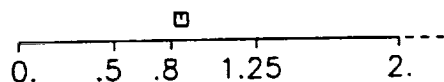


$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
16.59 (min)	0.339
20.	0.516
25.	1.71
30.	5.20
35.	11.1
40.	17.6
50.	38.2
60.	96.0
67.27 (max)	157.

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
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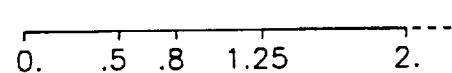
RMS %  
 Error  
 17.69

Life Prediction Ratio Summary



RMS %  
 Error

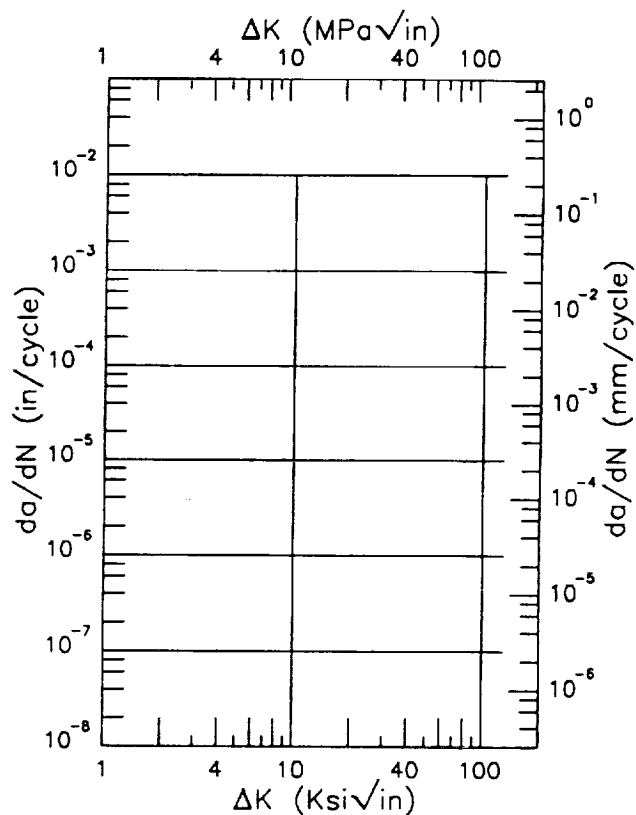
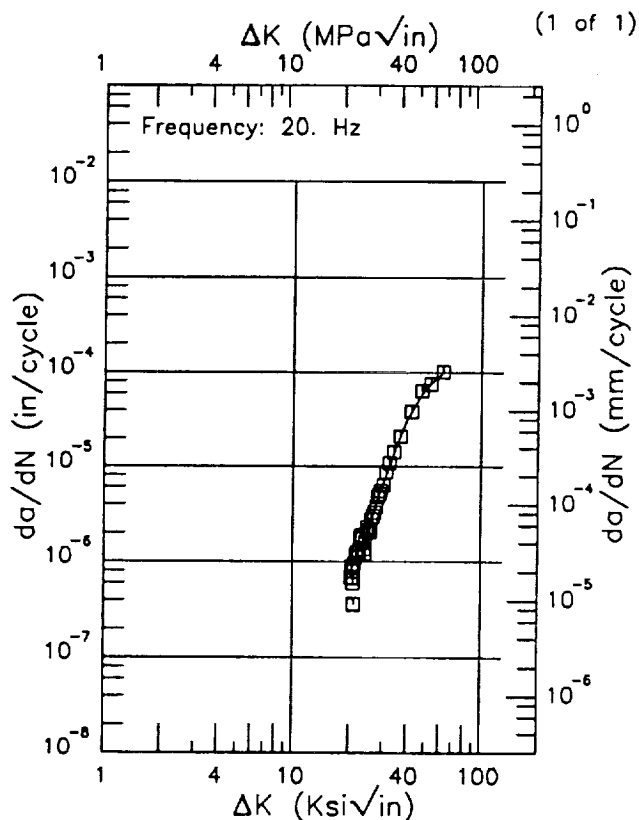
Life Prediction Ratio Summary



F 316L

Condition/Ht: -99  
 Form:  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.03  
 Environment: LAB AIR; RT

Yield Strength: 40.6 ksi  
 Ult. Strength: 75.1 ksi  
 Specimen Thk: 0.787 in.  
 Specimen Width: 1.575 in.  
 Ref: EPBER



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
20.22 (min)	0.756
25.	2.19
30.	6.46
35.	15.9
40.	31.6
50.	67.7
60.	93.3
62.00 (max)	100.

ΔK (Ksi√in) da/dN (10<sup>-6</sup>in/cycle)

RMS %  
 Error  
 19.40

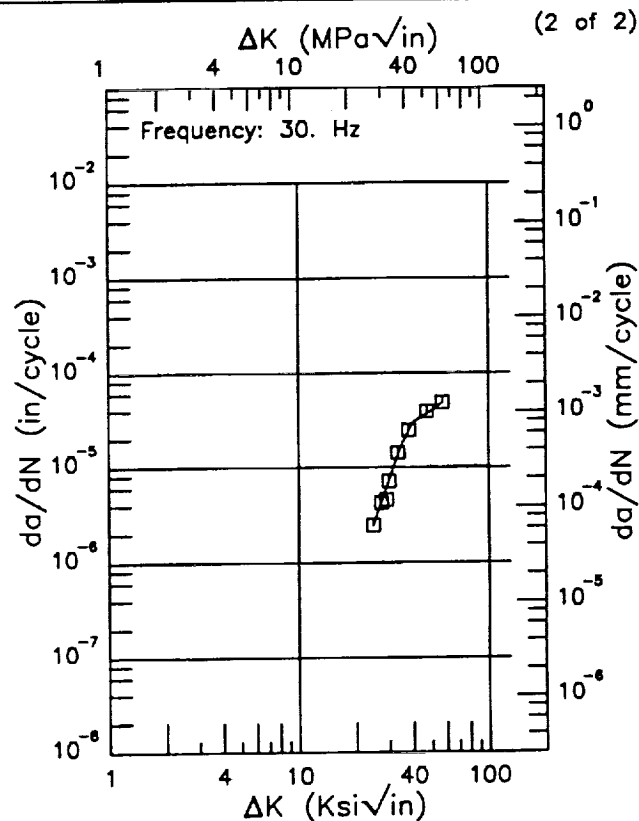
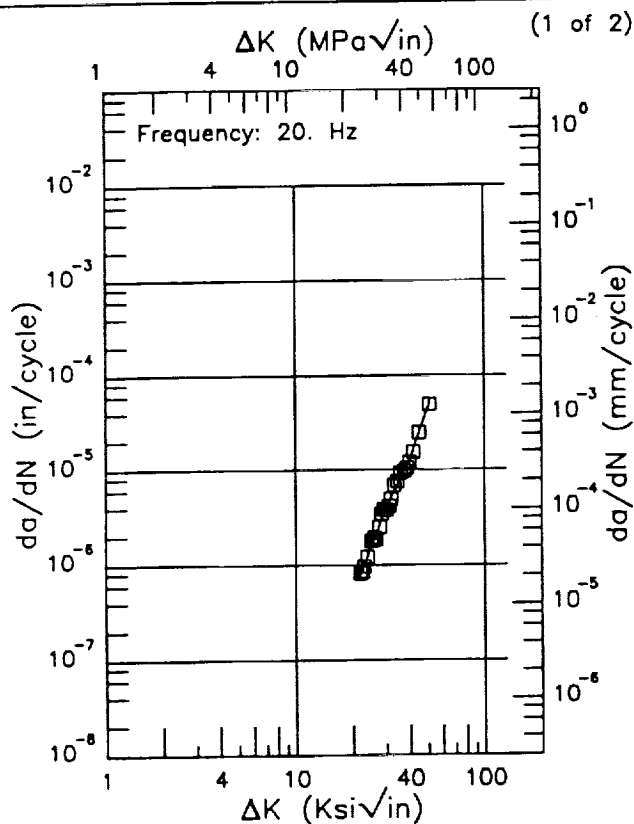
Life Prediction Ratio Summary  
 □  
 0. .5 .8 1.25 2.---

RMS %  
 Error

Life Prediction Ratio Summary  
 0. .5 .8 1.25 2.---

Condition/Ht: -99  
 Form:  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.03  
 Environment: LAB AIR; RT

Yield Strength: 40.6 ksi  
 Ult. Strength: 75.1 ksi  
 Specimen Thk: 0.591 in.  
 Specimen Width: 1.181 in.  
 Ref: EPBER



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
21.69 (min)	0.769
25.	1.57
30.	4.11
35.	7.59
40.	12.8
50.	45.1
50.79 (max)	48.6

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
24.61 (min)	2.42
25.	2.61
30.	7.31
35.	17.4
40.	29.8
50.	40.0
56.94 (max)	48.0

RMS %  
 Error  
 8.01

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

RMS %  
 Error  
 8.84

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

F | 316L |

Condition/Ht: -99

Form:

Specimen Type: CT

Orientation:

Stress Ratio: 0.05

Environment: LAB AIR; RT

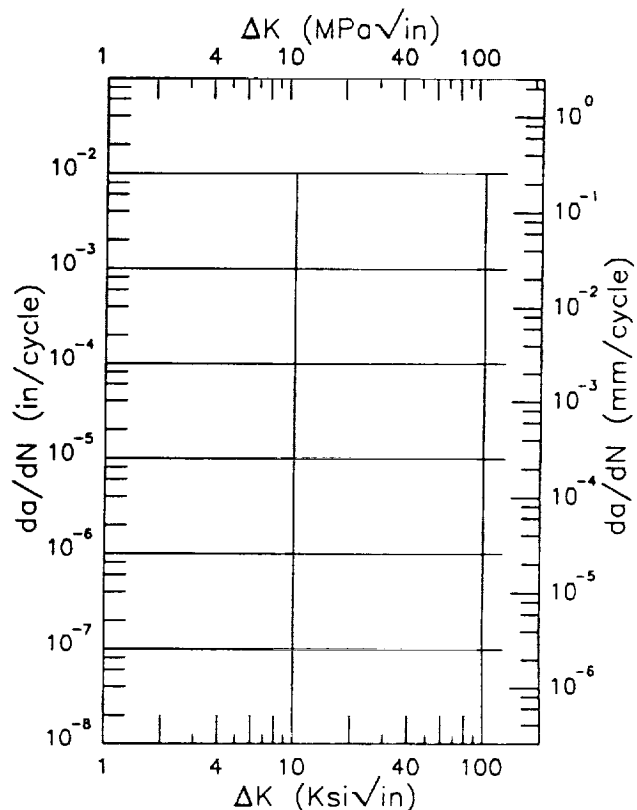
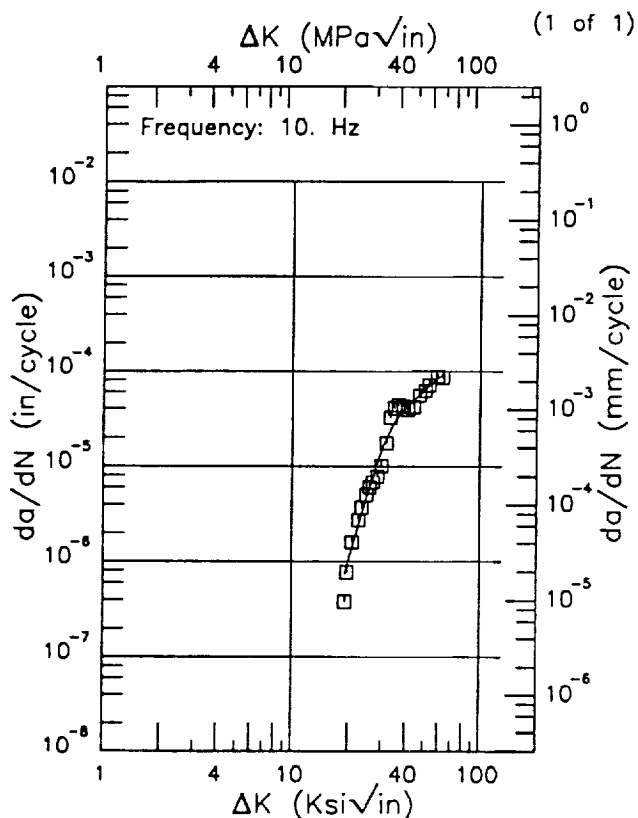
Yield Strength: 40.6 ksi

Ult. Strength: 75.1 ksi

Specimen Thk: 0.787 in.

Specimen Width: 1.575 in.

Ref: EPBER

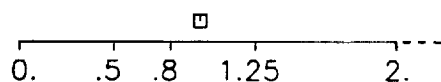


$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
19.10 (min)	0.731
20.	1.01
25.	4.98
30.	15.4
35.	29.8
40.	41.8
50.	62.4
60.	86.7
62.21 (max)	90.4

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
--------------------------------------	-------------------------------

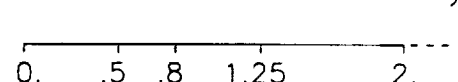
RMS %  
Error  
21.20

Life Prediction Ratio Summary



RMS %  
Error

Life Prediction Ratio Summary



Condition/Ht: -99

Form:

Specimen Type: Cantilever SG

Orientation:

Stress Ratio: 0.

Frequency: 0.1 Hz

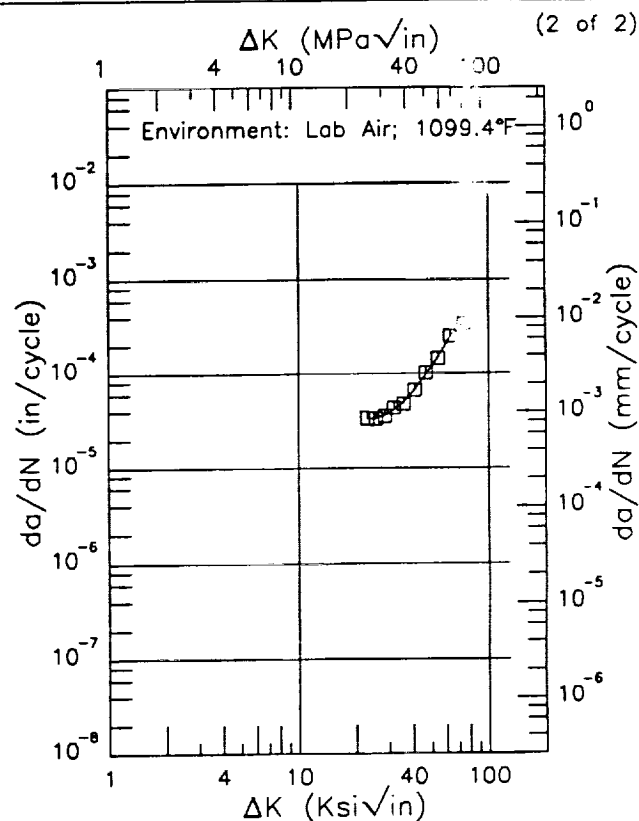
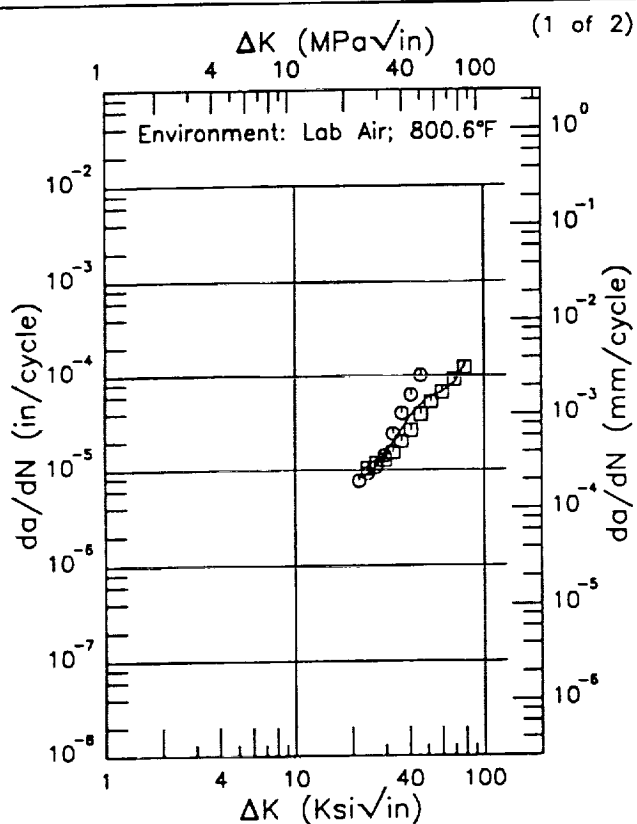
Yield Strength: 44.1 ksi

Ult. Strength: 82.2 ksi

Specimen Thk: 0.5 in.

Specimen Width: 2.5 in.

Ref: EPNRL

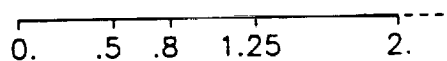


$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
21.65 (min)	8.14
25.	9.60
30.	15.1
35.	24.5
40.	36.9
50.	59.7
60.	68.3
70.	85.7
78.13 (max)	129.

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
22.98 (min)	33.6
25.	33.5
30.	38.3
35.	48.7
40.	64.7
50.	118.
60.	214.
70.	321.
73.65 (max)	334.

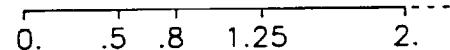
RMS %  
Error  
32.69

Life Prediction Ratio Summary



RMS %  
Error  
3.38

Life Prediction Ratio Summary



E 316L

Condition/Ht: -99

Form:

Specimen Type: Cantilever SG

Orientation:

Stress Ratio: 0.

Frequency: 0.2 Hz

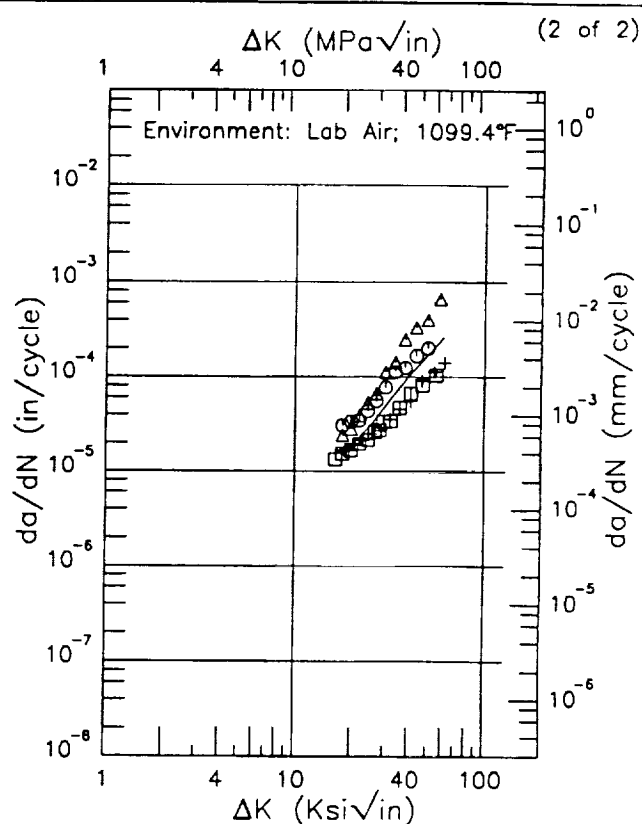
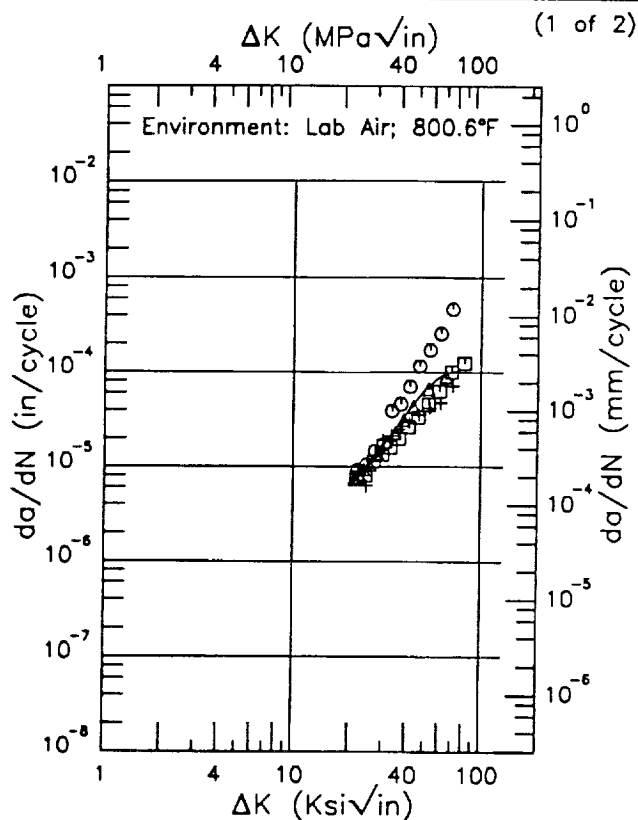
Yield Strength: 44.1 ksi

Ult. Strength: 82.2 ksi

Specimen Thk: 0.49 - 0.5 in.

Specimen Width: 2.5 - 2.503 in.

Ref: EPNRL



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
21.10 (min)	7.06
25.	10.2
30.	16.6
35.	25.8
40.	37.7
50.	65.7
60.	90.2
70.	102.
80.	99.6
80.62 (max)	99.0

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
16.41 (min)	16.2
20.	19.4
25.	30.3
30.	48.5
35.	73.7
40.	104
50.	172
60.	253
61.25 (max)	265.

RMS %  
Error  
70.66

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

RMS %  
Error  
69.49

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

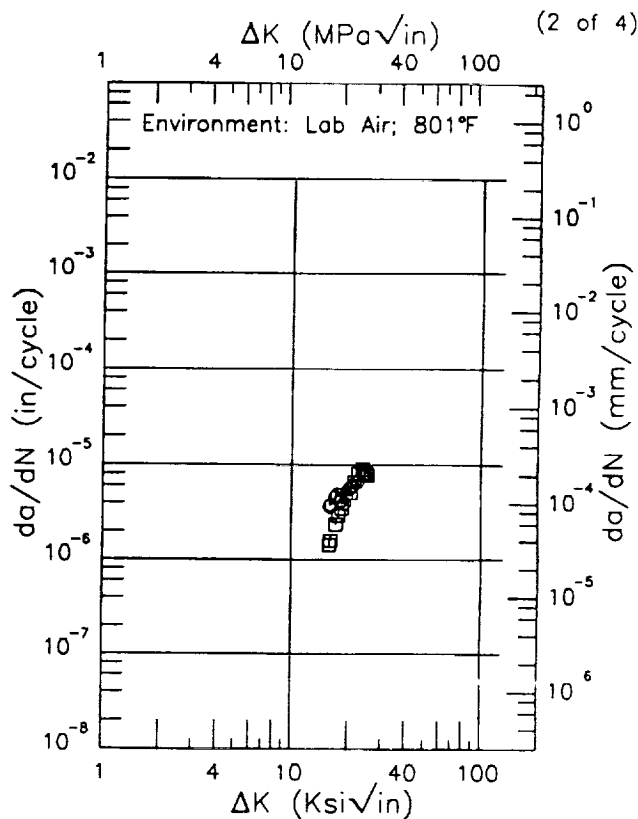
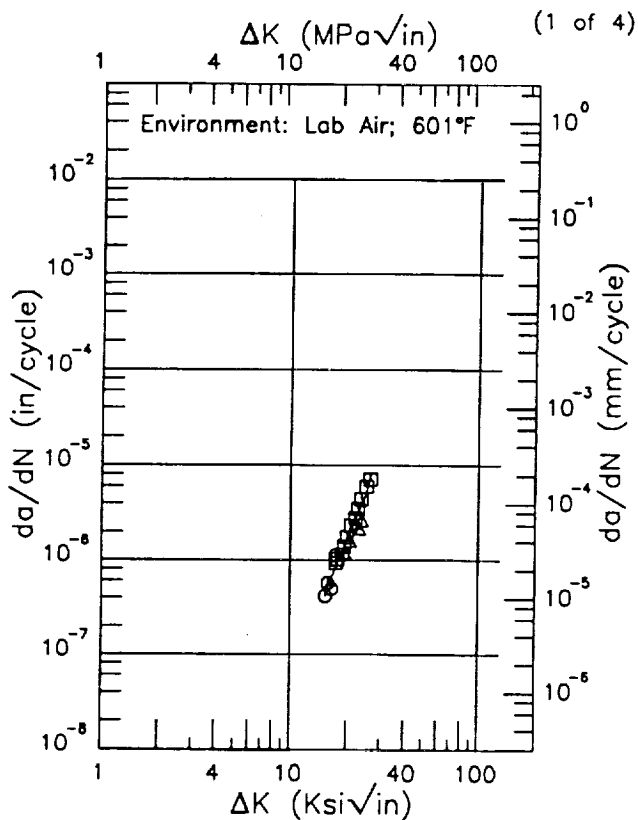
A1-128



E | CF8 |

Condition/Ht: CAST  
Form: Casting  
Specimen Type: CT  
Orientation:  
Stress Ratio: 0.05  
Frequency: 0.7 Hz

Yield Strength: 22.9 ksi  
Ult. Strength: 55.4 ksi  
Specimen Thk: 0.509 - 0.52 in.  
Specimen Width: 1.836 - 1.845 in.  
Ref: EPWS1



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
15.27 (min)	0.415
16.	0.549
20.	1.67
25.	5.02
26.39 (max)	7.87

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
15.80 (min)	3.06
16.	3.07
20.	5.26
25.	8.42
25.23 (max)	8.40

RMS %  
Error  
17.80

Life Prediction Ratio Summary  

 0. .5 .8 1.25 2.

RMS %  
Error  
21.73

Life Prediction Ratio Summary  

 0. .5 .8 1.25 2.

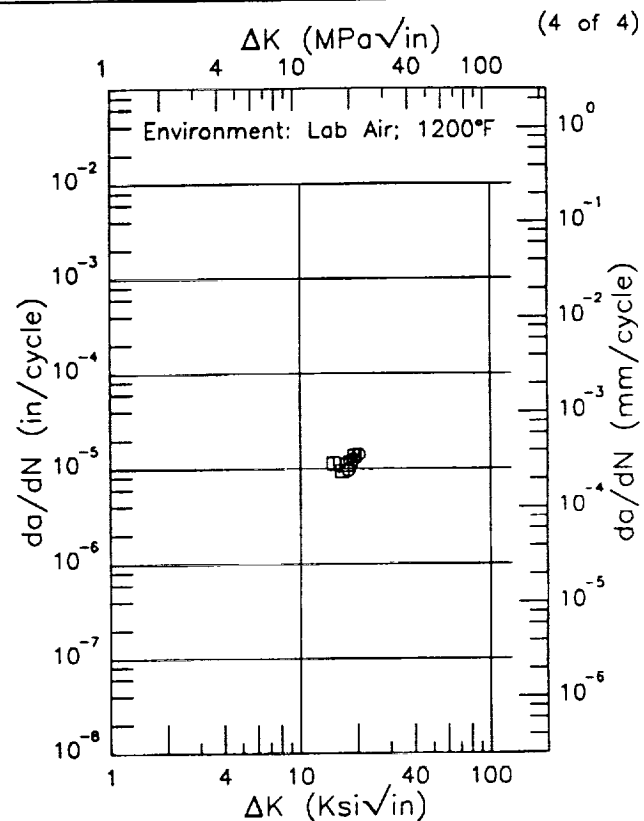
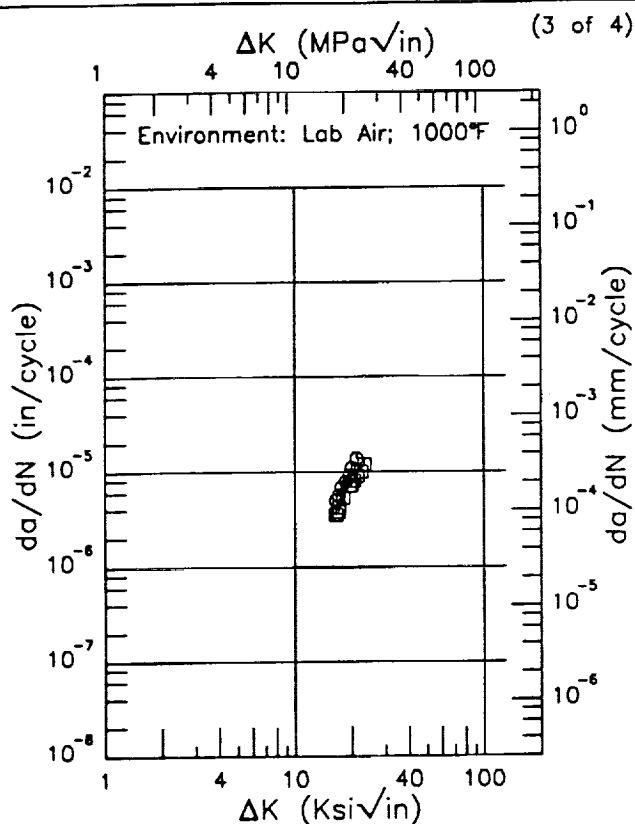
A1-129

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Condition/Ht: CAST  
 Form: Casting  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.05  
 Frequency: 0.7 Hz

Yield Strength: 22.9 ksi  
 Ult. Strength: 55.4 ksi  
 Specimen Thk: 0.509 - 0.52 in.  
 Specimen Width: 1.836 - 1.845 in.  
 Ref: EPWS1

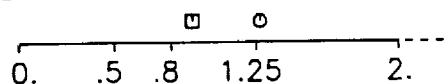


$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
16.37 (min)	4.29
20.	9.18
23.12 (max)	11.8

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
14.90 (min)	11.2
16.	9.15
20.	14.0
20.17 (max)	14.1

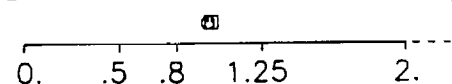
RMS %  
 Error  
 17.95

Life Prediction Ratio Summary



RMS %  
 Error  
 5.69

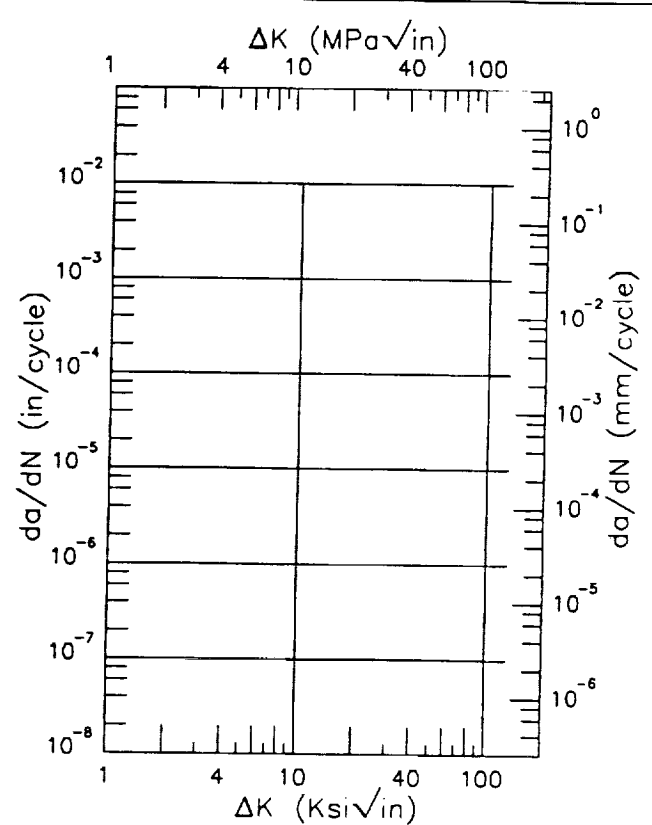
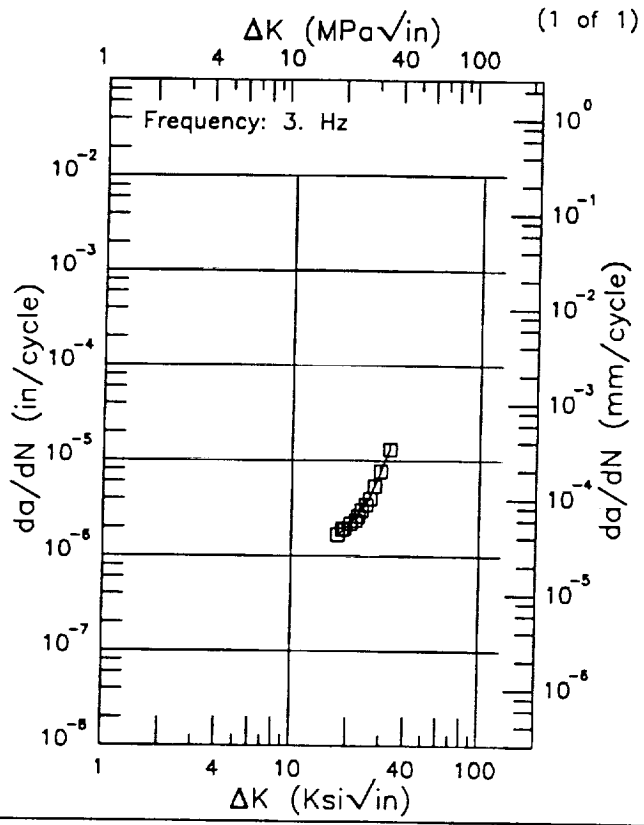
Life Prediction Ratio Summary



F | CF8 |

Condition/Ht: CAST  
 Form: Casting  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.05  
 Environment: LAB AIR; RT

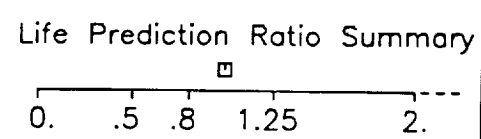
Yield Strength: 22.9 ksi  
 Ult. Strength: 55.4 ksi  
 Specimen Thk: 0.516 in.  
 Specimen Width: 1.844 in.  
 Ref: EPWS1



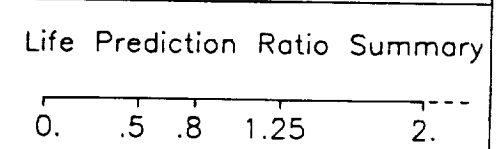
$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
17.52 (min)	1.69
20.	2.08
25.	3.54
30.	8.48
32.76 (max)	13.0

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
--------------------------------------	-------------------------------

RMS %  
 Error  
 3.84



RMS %  
 Error



Condition/Ht: CAST

Form:

Specimen Type: CT

Orientation:

Stress Ratio: 0.05

Frequency: 0.7 Hz

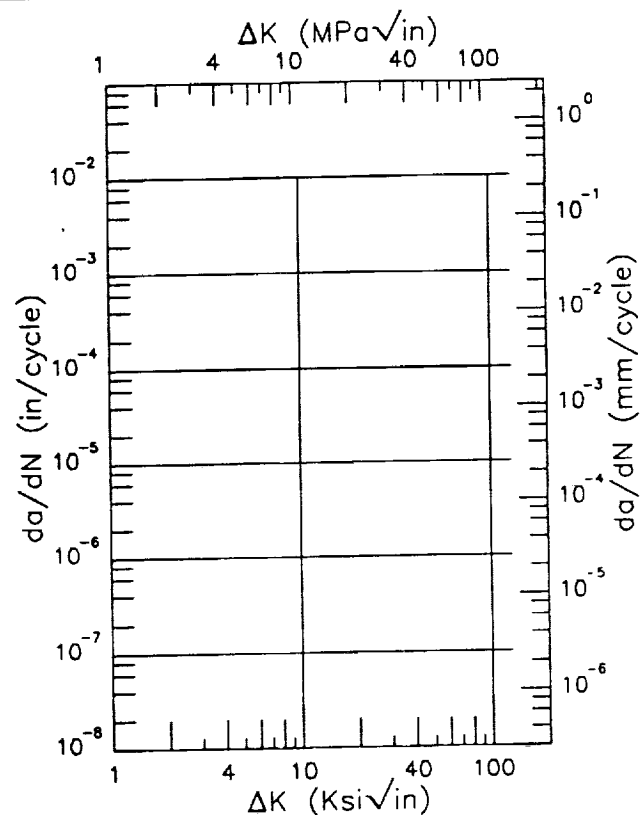
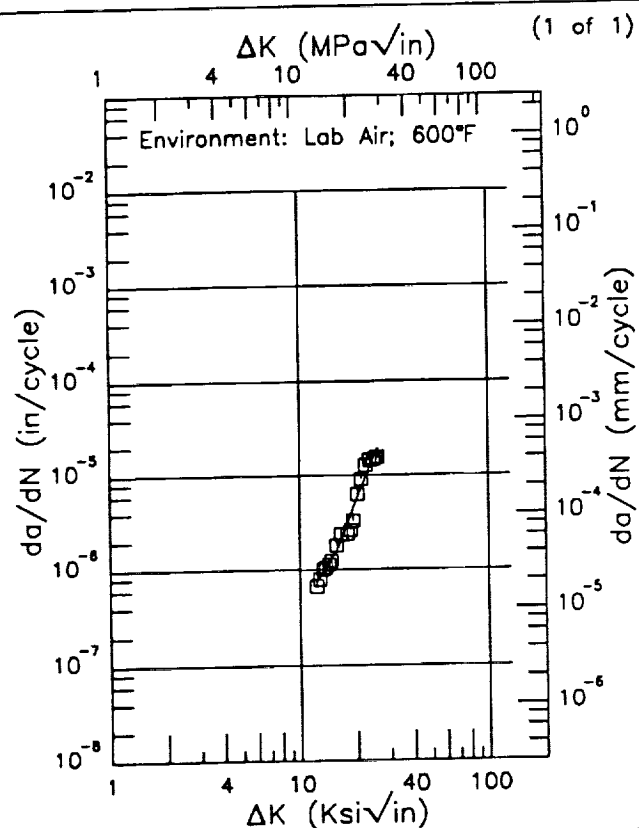
Yield Strength:

Ult. Strength:

Specimen Thk: 0.498 in.

Specimen Width: 2.002 in.

Ref: EPJAM

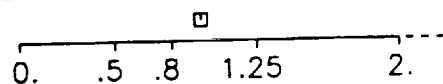


$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
12.22 (min)	0.809
13.	0.878
16.	1.77
20.	5.59
25.	16.9
25.96 (max)	19.5

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
--------------------------------------	-----------------------------------

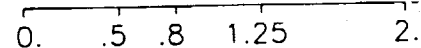
RMS %  
Error  
17.21

Life Prediction Ratio Summary



RMS %  
Error

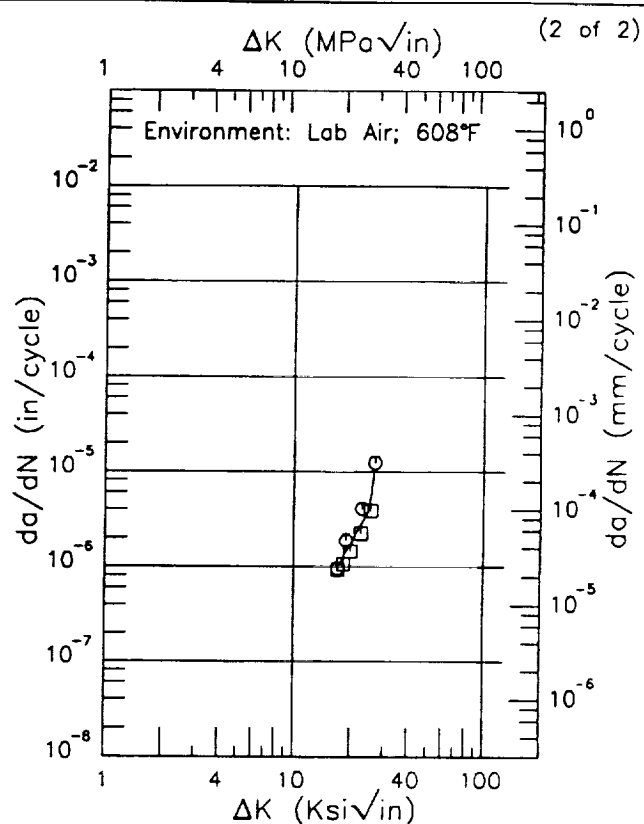
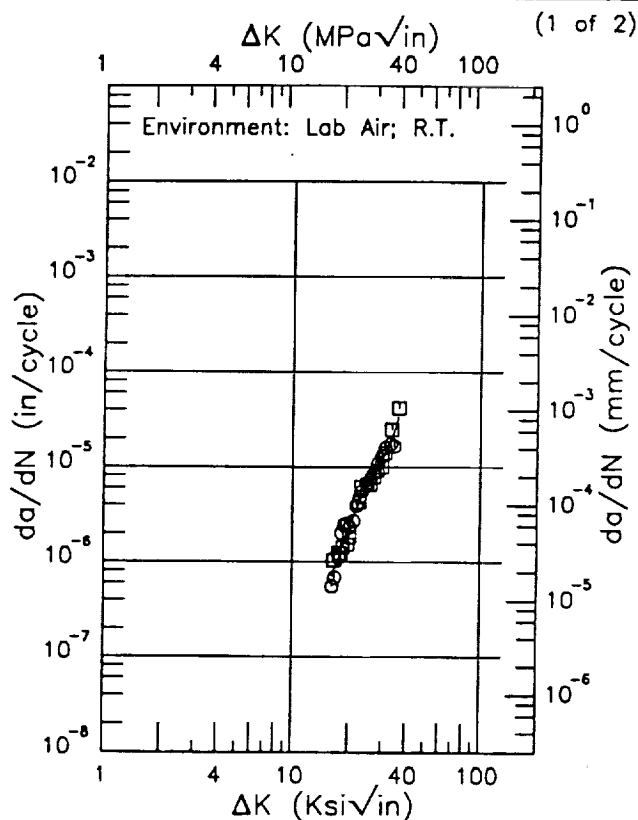
Life Prediction Ratio Summary



E | CF8 |

Condition/Ht: -99  
Form: Casting  
Specimen Type: CT  
Orientation:  
Stress Ratio: 0.05  
Frequency: 10 Hz

Yield Strength: 39.9 ksi  
Ult. Strength: 62.4 ksi  
Specimen Thk: 0.787 in.  
Specimen Width: 1.575 in.  
Ref: EPBER



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
16.22 (min)	0.714
20.	2.40
25.	6.71
30.	12.0
35.	26.0
36.16 (max)	33.7

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
17.01 (min)	0.955
20.	1.76
25.	3.87
26.60 (max)	10.6

RMS %  
Error  
19.16

Life Prediction Ratio Summary  

 0. .5 .8 1.25 2.

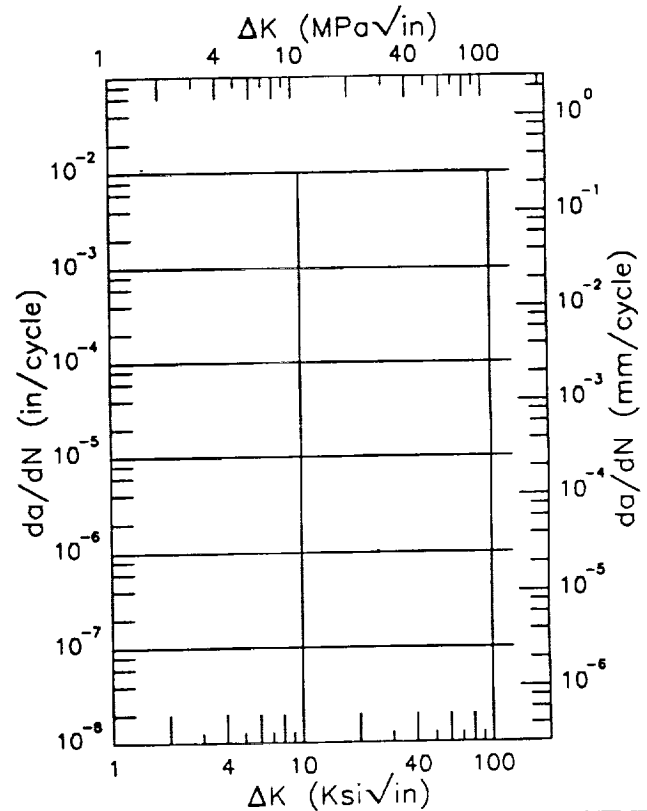
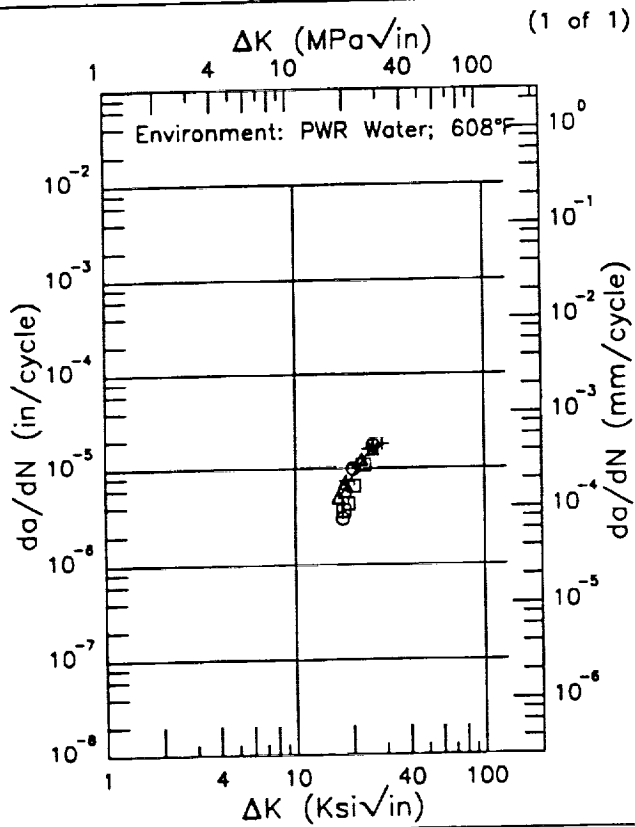
RMS %  
Error  
21.79

Life Prediction Ratio Summary  

 0. .5 .8 1.25 2.

Condition/Ht: -99  
 Form: Casting  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.05  
 Frequency: 0.1 Hz

Yield Strength: 39.9 ksi  
 Ult. Strength: 62.4 ksi  
 Specimen Thk: 0.787 in.  
 Specimen Width: 1.575 in.  
 Ref: EPBER

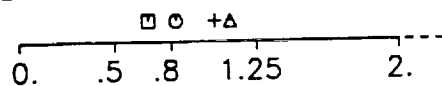


$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
16.88 (min)	4.78
20.	8.26
25.	16.3
28.80 (max)	17.9

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
--------------------------------------	-----------------------------------

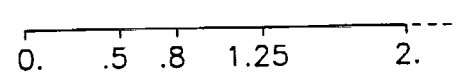
RMS %  
 Error  
 20.48

Life Prediction Ratio Summary



RMS %  
 Error

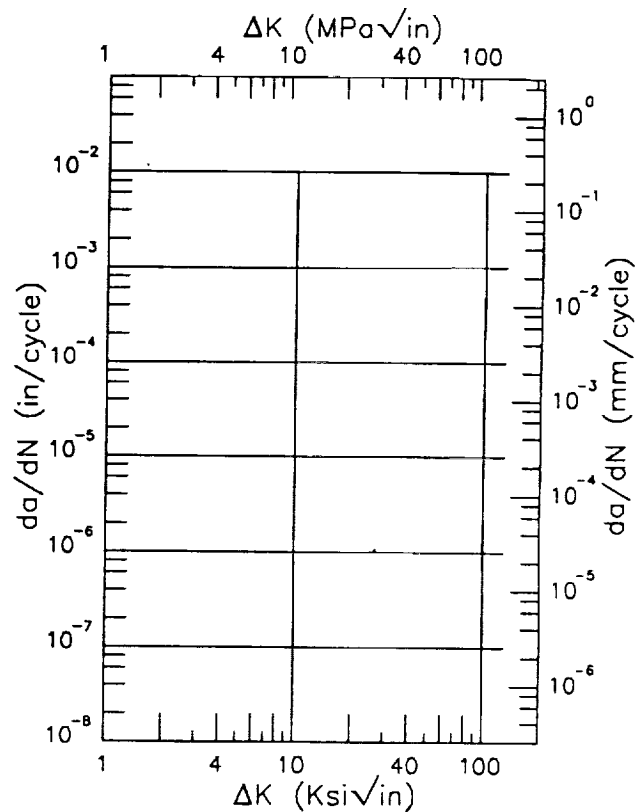
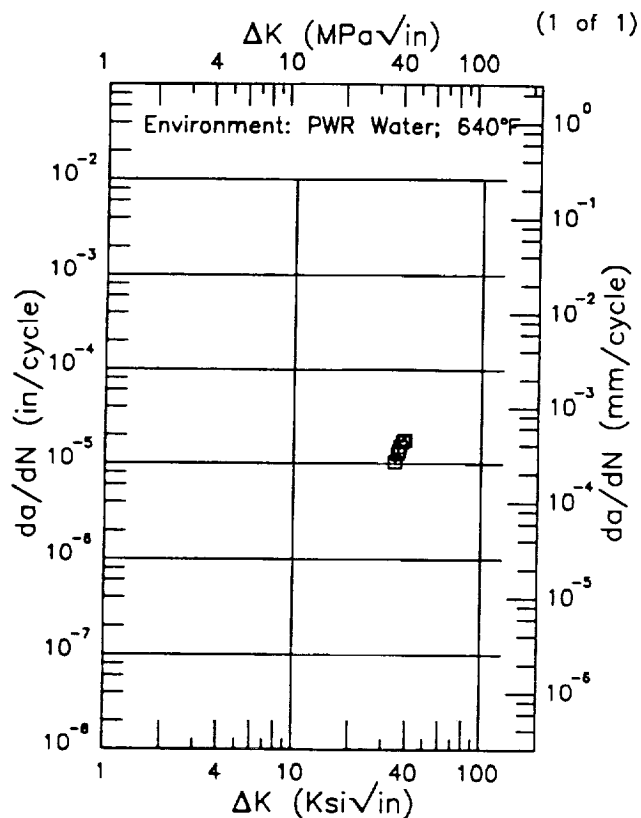
Life Prediction Ratio Summary



E | CF8A |

Condition/Ht: AS - CAST, WAS  
 Form:  
 Specimen Type: CT  
 Orientation: L-C  
 Stress Ratio: 0.11  
 Frequency: 1 Hz

Yield Strength: 43.9 ksi  
 Ult. Strength: 81.2 ksi  
 Specimen Thk: 2 in.  
 Specimen Width: 4 in.  
 Ref: EPMEA



$\Delta K$  (Ksi $\sqrt{\text{in}}$ )       $da/dN$  ( $10^{-6}$  in/cycle)

$\Delta K$  (Ksi $\sqrt{\text{in}}$ )       $da/dN$  ( $10^{-6}$  in/cycle)

RMS %  
Error

Life Prediction Ratio Summary

0.   .5   .8   1.25   2. ---

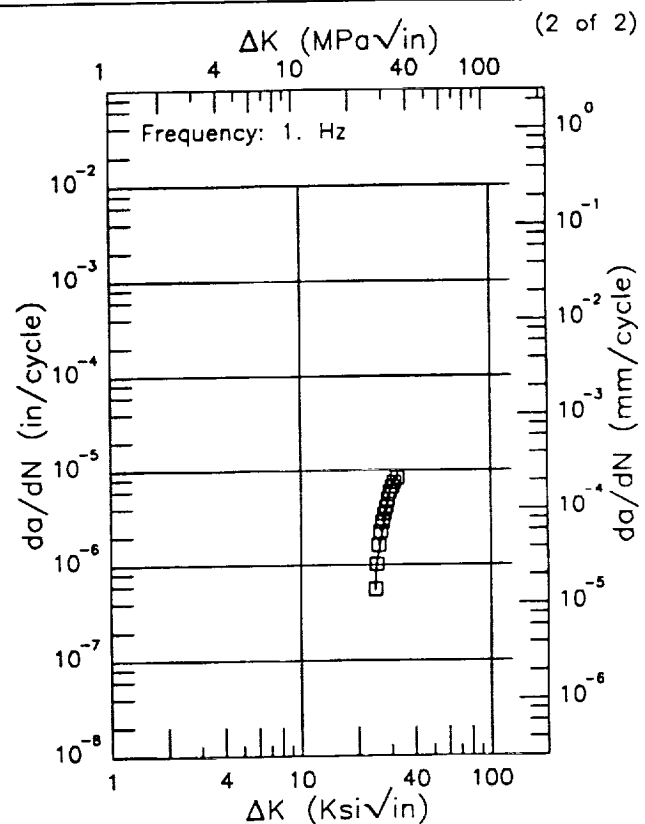
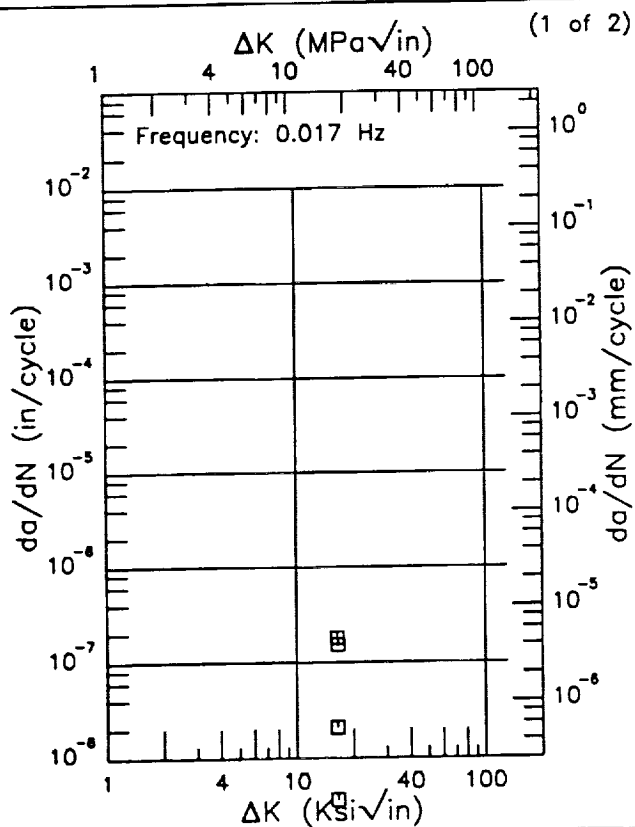
RMS %  
Error

Life Prediction Ratio Summary

0.   .5   .8   1.25   2. ---

Condition/Ht: AS - CAST, WAS  
 Form:  
 Specimen Type: CT  
 Orientation: L-C  
 Stress Ratio: 0.14  
 Environment: PWR WATER;550°F

Yield Strength: 43.9 ksi  
 Ult. Strength: 81.2 ksi  
 Specimen Thk: 2 in.  
 Specimen Width: 4 in.  
 Ref: EPMEA



ΔK (Ksi√in)      da/dN (10<sup>-6</sup> in/cycle)

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
24.54 (min)	0.545
25.	0.978
30.	6.57
32.00 (max)	8.30

RMS %  
Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.---

RMS %  
Error  
23.37

Life Prediction Ratio Summary

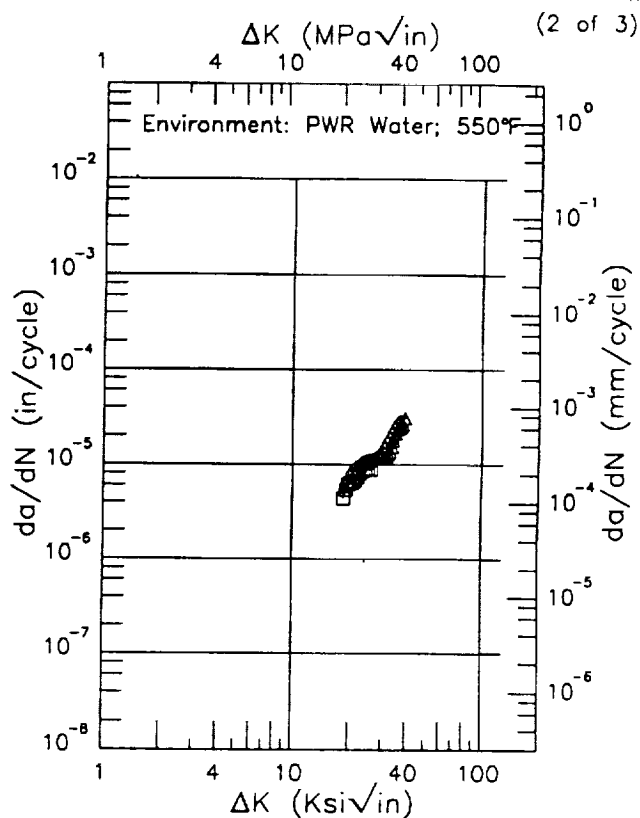
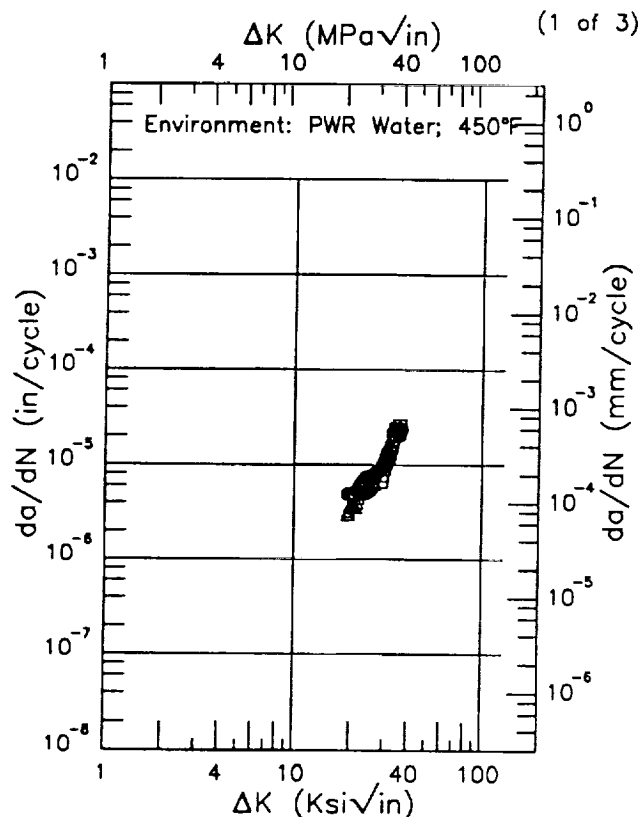
0. .5 .8 1.25 2.---



E | CF8A |

Condition/Ht: AS - CAST, WAS  
 Form:  
 Specimen Type: CT  
 Orientation: L-C  
 Stress Ratio: 0.2  
 Frequency: 0. Hz

Yield Strength: 43.9 ksi  
 Ult. Strength: 81.2 ksi  
 Specimen Thk: 2 in.  
 Specimen Width: 4 in.  
 Ref: EPMEA



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
19.17 (min)	3.93
20.	4.11
25.	6.57
30.	10.1
35.	22.2
36.79 (max)	22.4

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
18.54 (min)	4.63
20.	6.23
25.	9.96
30.	12.3
35.	20.7
39.12 (max)	29.0

RMS %  
 Error  
 12.93

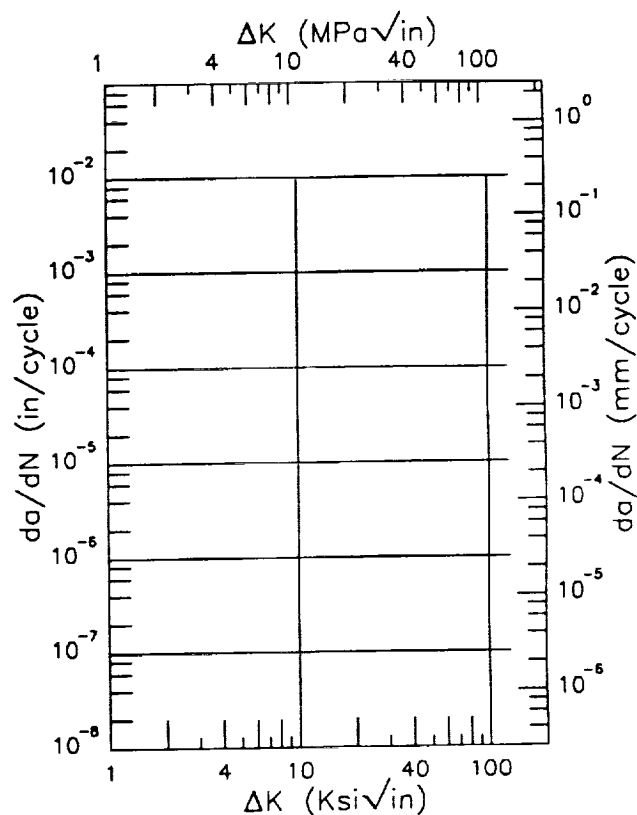
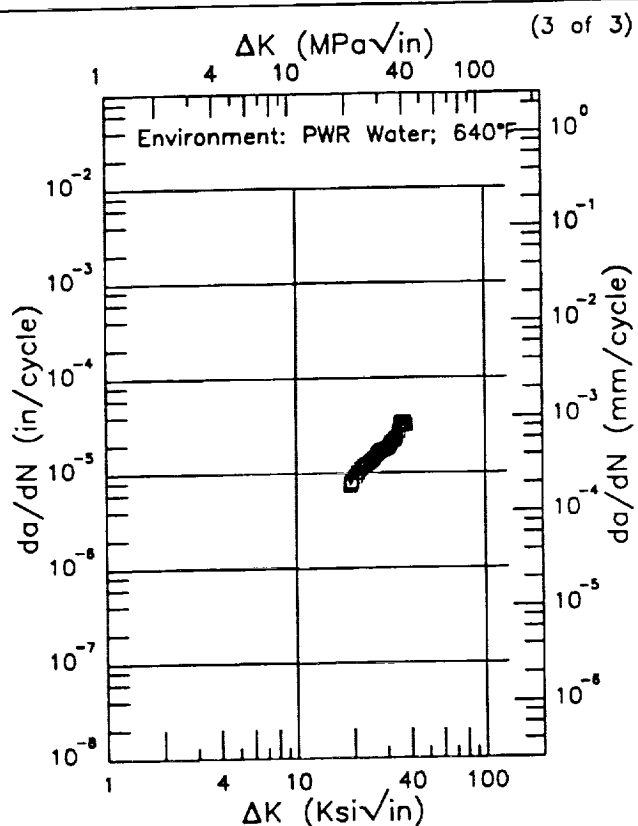
Life Prediction Ratio Summary  
  
 0. .5 .8 1.25 2.

RMS %  
 Error  
 8.68

Life Prediction Ratio Summary  
  
 0. .5 .8 1.25 2.

Condition/Ht: AS - CAST, WAS  
 Form:  
 Specimen Type: CT  
 Orientation: L-C  
 Stress Ratio: 0.2  
 Frequency: 0. Hz

Yield Strength: 43.9 ksi  
 Ult. Strength: 81.2 ksi  
 Specimen Thk: 2 in.  
 Specimen Width: 4 in.  
 Ref: EPMEA

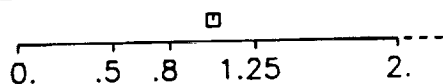


$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
19.15 (min)	7.55
20.	8.58
25.	13.9
30.	18.2
35.	28.5
37.70 (max)	36.2

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
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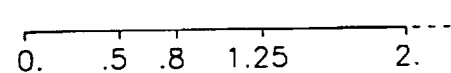
RMS %  
 Error  
 4.40

Life Prediction Ratio Summary



RMS %  
 Error

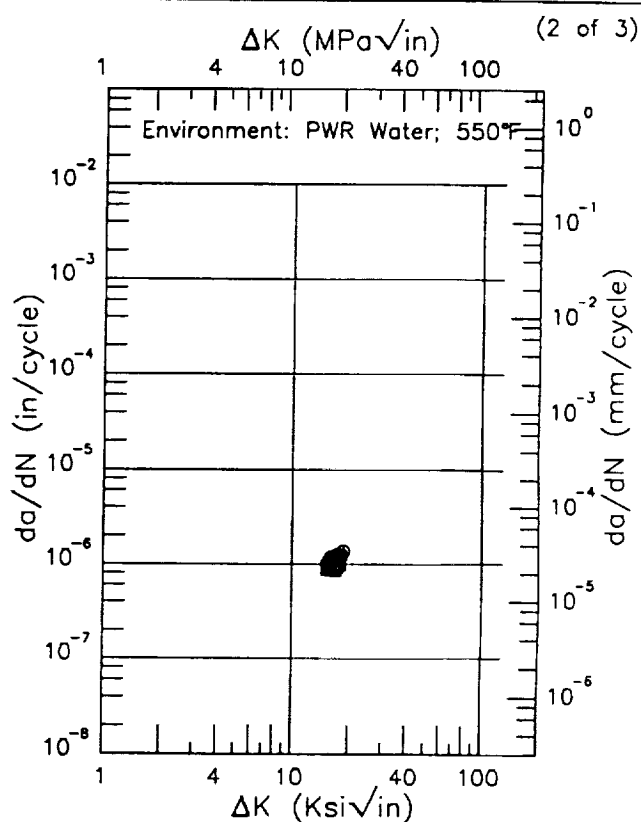
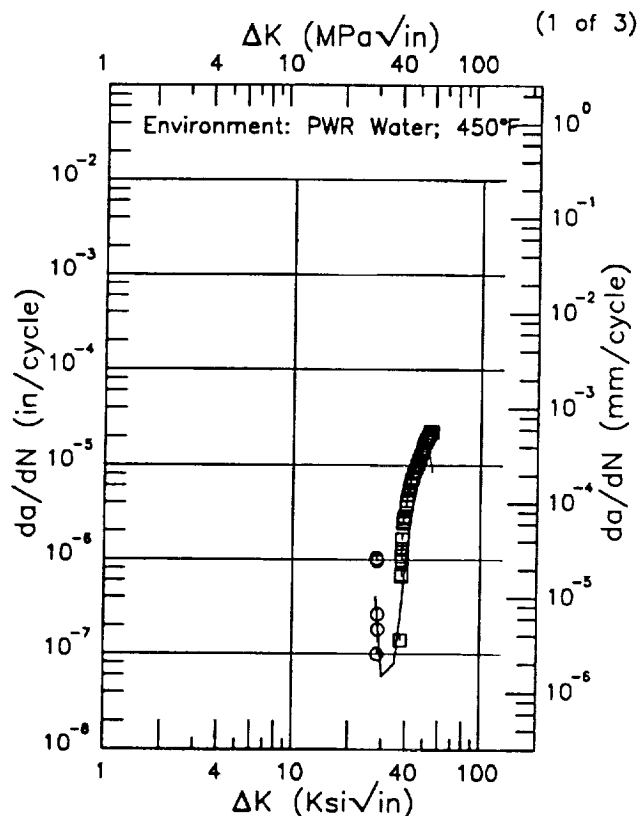
Life Prediction Ratio Summary



E | CF8A |

Condition/Ht: AS - CAST, WAS  
 Form:  
 Specimen Type: CT  
 Orientation: L-C  
 Stress Ratio: 0.2  
 Frequency: 1 Hz

Yield Strength: 43.9 ksi  
 Ult. Strength: 81.2 ksi  
 Specimen Thk: 2 in.  
 Specimen Width: 4 in.  
 Ref: EPMEA



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
27.77 (min)	0.404
30.	0.0582
35.	0.0800
40.	1.13
50.	26.3
54.73 (max)	8.61

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
15.29 (min)	0.923
16.	1.01
18.64 (max)	1.33

RMS %  
 Error  
 >100.0

Life Prediction Ratio Summary

○ □

0. .5 .8 1.25 2.

RMS %  
 Error  
 11.93

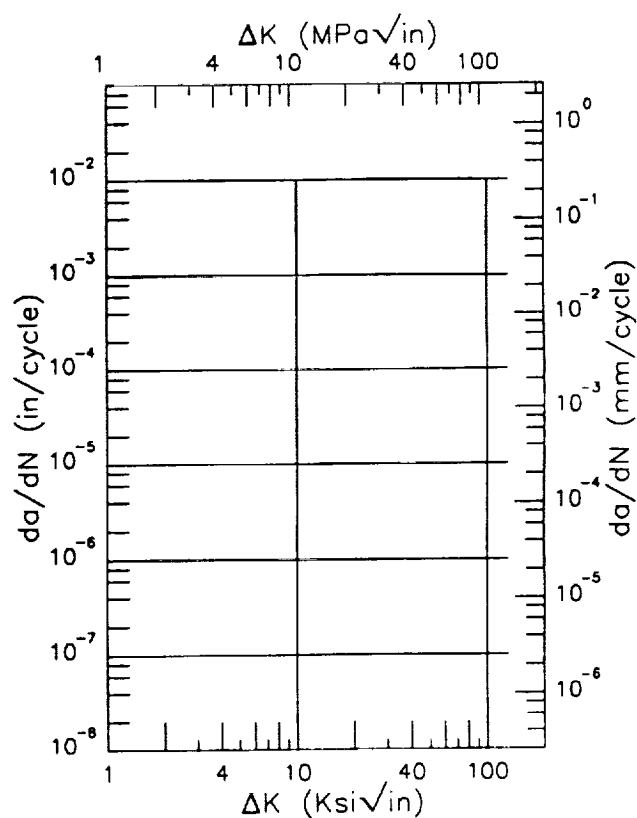
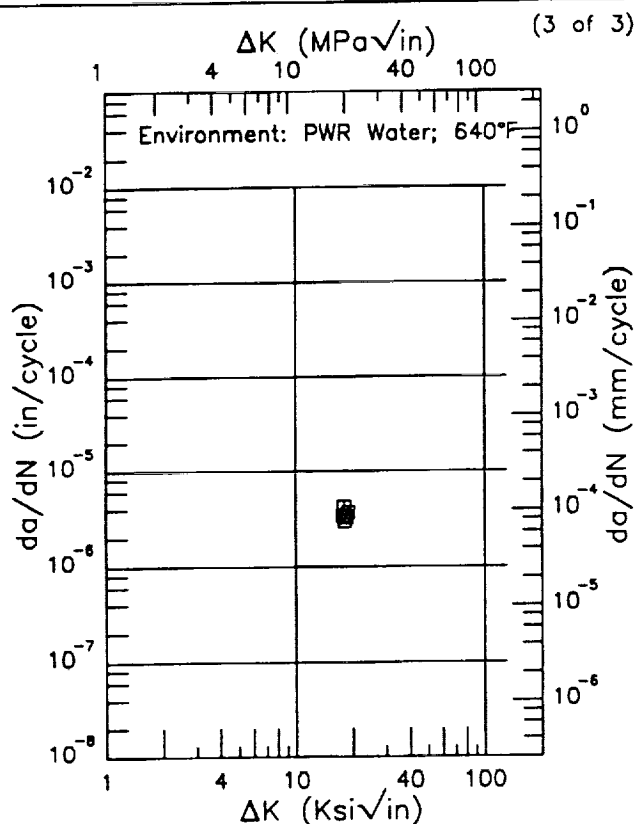
Life Prediction Ratio Summary

□ ○

0. .5 .8 1.25 2.

Condition/Ht: AS - CAST, WAS  
Form:  
Specimen Type: CT  
Orientation: L-C  
Stress Ratio: 0.2  
Frequency: 1 Hz

Yield Strength: 43.9 ksi  
Ult. Strength: 81.2 ksi  
Specimen Thk: 2 in.  
Specimen Width: 4 in.  
Ref: EPMEA



$\Delta K$  (Ksi $\sqrt{\text{in}}$ )       $da/dN$  ( $10^{-6}$  in/cycle)

$\Delta K$  (Ksi $\sqrt{\text{in}}$ )       $da/dN$  ( $10^{-6}$  in/cycle)

RMS %  
Error

Life Prediction Ratio Summary

0.    .5    .8    1.25    2. ---

RMS %  
Error

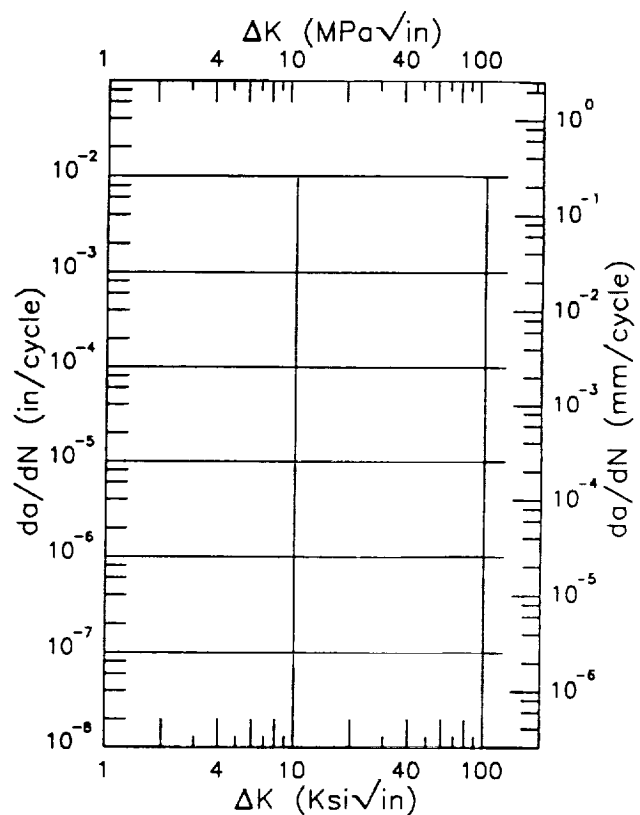
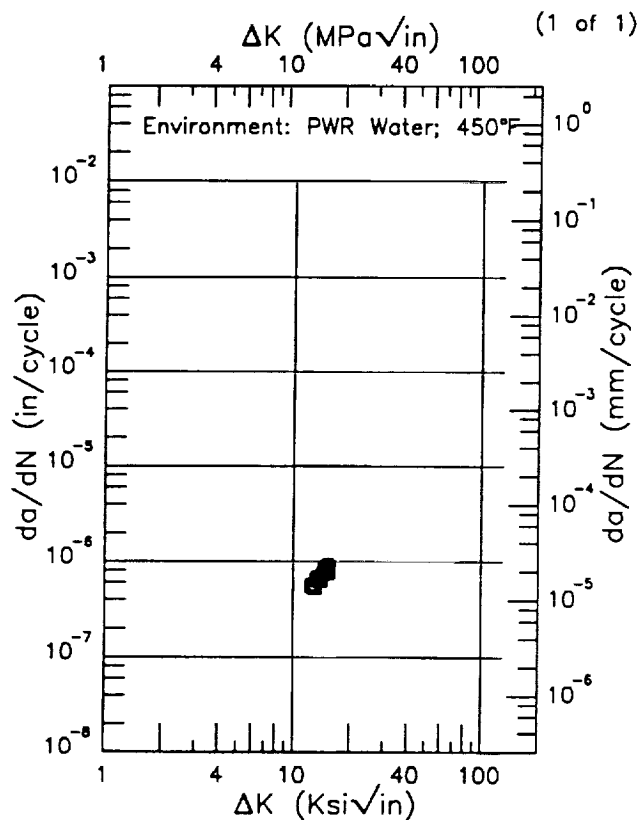
Life Prediction Ratio Summary

0.    .5    .8    1.25    2. ---

E | CF8A |

Condition/Ht: AS - CAST, WAS  
 Form:  
 Specimen Type: CT  
 Orientation: L-C  
 Stress Ratio: 0.29  
 Frequency: 1 Hz

Yield Strength: 43.9 ksi  
 Ult. Strength: 81.2 ksi  
 Specimen Thk: 2 in.  
 Specimen Width: 4 in.  
 Ref: EPMEA



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
12.36 (min)	0.557
13.	0.567
15.47 (max)	0.814

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
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RMS %  
 Error  
 9.71

Life Prediction Ratio Summary

0. 0.5 0.8 1.25 2.

RMS %  
 Error

Life Prediction Ratio Summary

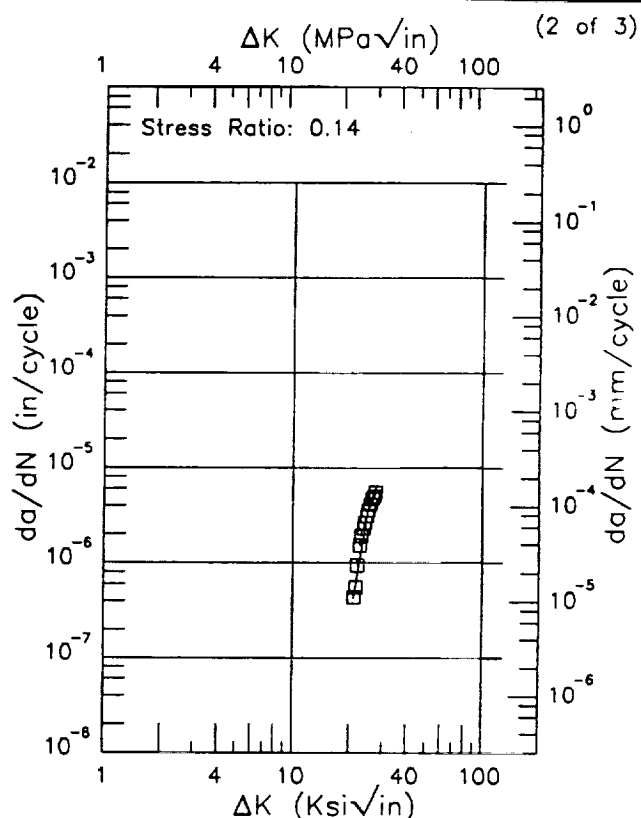
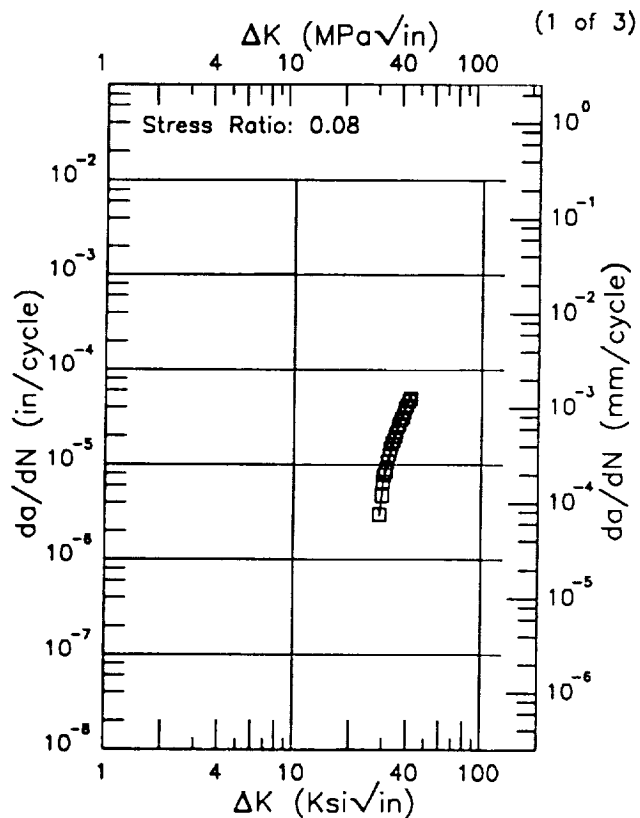
0. 0.5 0.8 1.25 2.

A1-142

R CF8A

Condition/Ht: AS - CAST, WAS  
 Form:  
 Specimen Type: CT  
 Orientation: C-L  
 Frequency: 1 Hz  
 Environment: PWR WATER;550°F

Yield Strength: 43.9 ksi  
 Ult. Strength: 81.2 ksi  
 Specimen Thk: 2 in.  
 Specimen Width: 4 in.  
 Ref: EPMEA



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
28.54 (min)	2.90
30.	7.02
35.	21.9
40.	43.6
41.46 (max)	48.9

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
21.03 (min)	0.421
25.	3.43
27.32 (max)	5.39

RMS %  
 Error  
 6.72

Life Prediction Ratio Summary  
  
 0. .5 .8 1.25 2.

RMS %  
 Error  
 26.91

Life Prediction Ratio Summary  
  
 0. .5 .8 1.25 2.

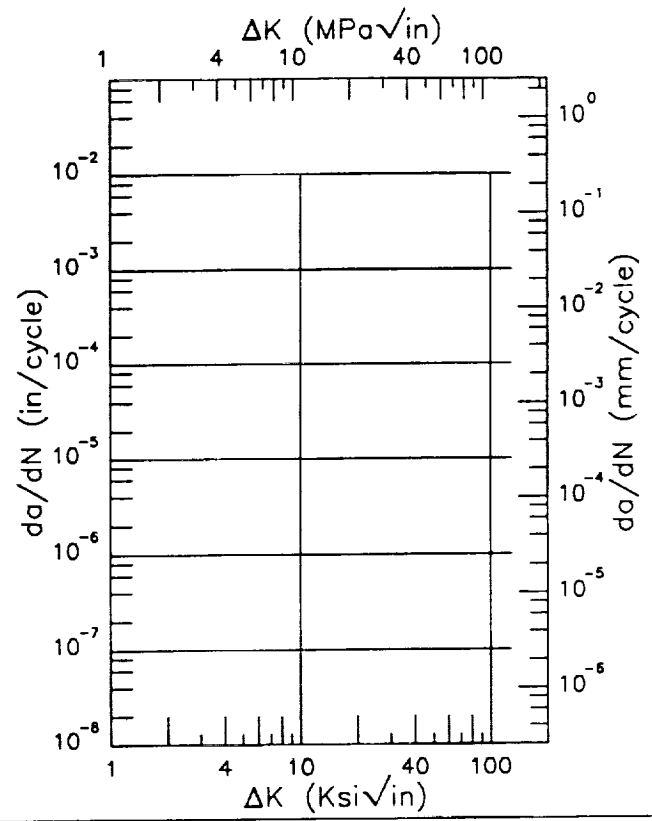
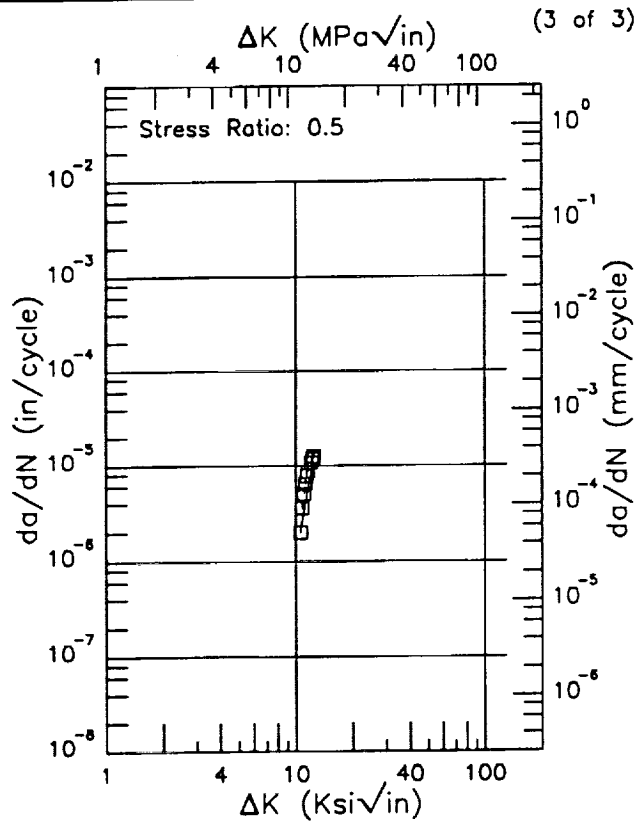
A1-143

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Condition/Ht: AS - CAST, WAS  
 Form:  
 Specimen Type: CT  
 Orientation: C-L  
 Frequency: 1 Hz  
 Environment: PWR WATER;550°F

Yield Strength: 43.9 ksi  
 Ult. Strength: 81.2 ksi  
 Specimen Thk: 2 in.  
 Specimen Width: 4 in.  
 Ref: EPMEA



ΔK (Ksi√in) da/dN (10<sup>-6</sup>in/cycle)  
 10.59 (min) 2.04  
 12.41 (max) 13.0

ΔK (Ksi√in) da/dN (10<sup>-6</sup>in/cycle)

RMS %  
 Error  
 46.97

Life Prediction Ratio Summary  
 0. .5 .8 1.25 2.

RMS %  
 Error

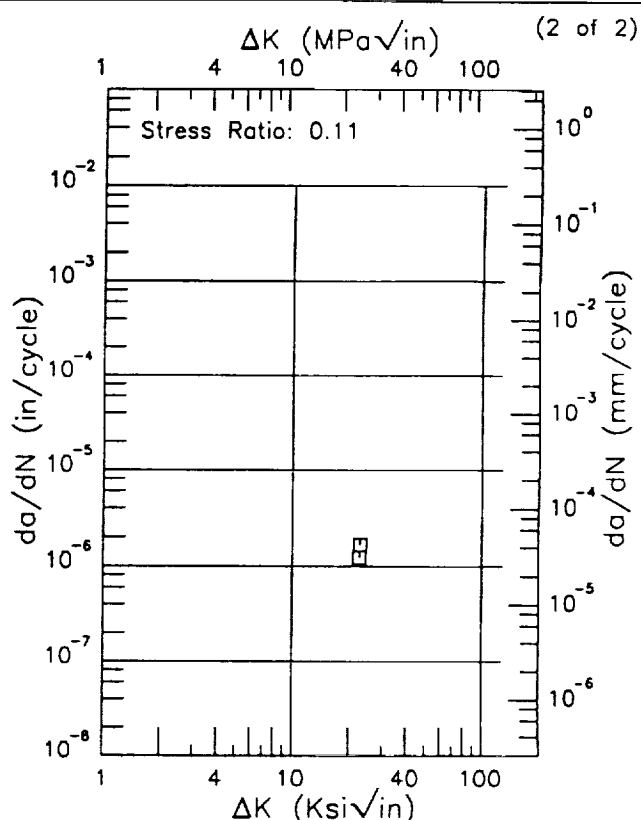
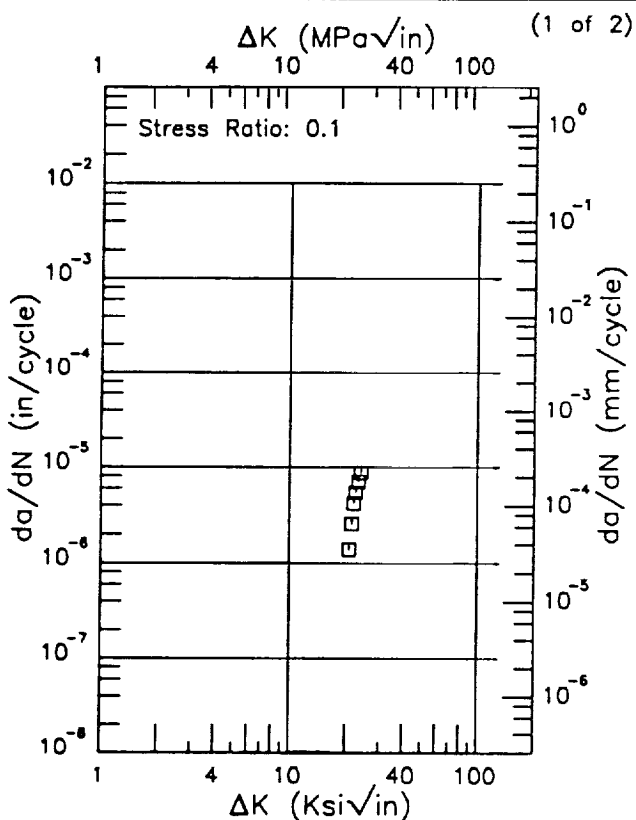
Life Prediction Ratio Summary  
 0. .5 .8 1.25 2.



R | CF8A |

Condition/Ht: AS - CAST, WAS  
 Form:  
 Specimen Type: CT  
 Orientation: C-L  
 Frequency: 1 Hz  
 Environment: PWR WATER;640°F

Yield Strength: 43.9 ksi  
 Ult. Strength: 81.2 ksi  
 Specimen Thk: 2 in.  
 Specimen Width: 4 in.  
 Ref: EPMEA



ΔK (Ksi√in)      da/dN (10<sup>-6</sup>in/cycle)

ΔK (Ksi√in)      da/dN (10<sup>-6</sup>in/cycle)

RMS %  
Error

Life Prediction Ratio Summary

0.    .5    .8    1.25    2. ---

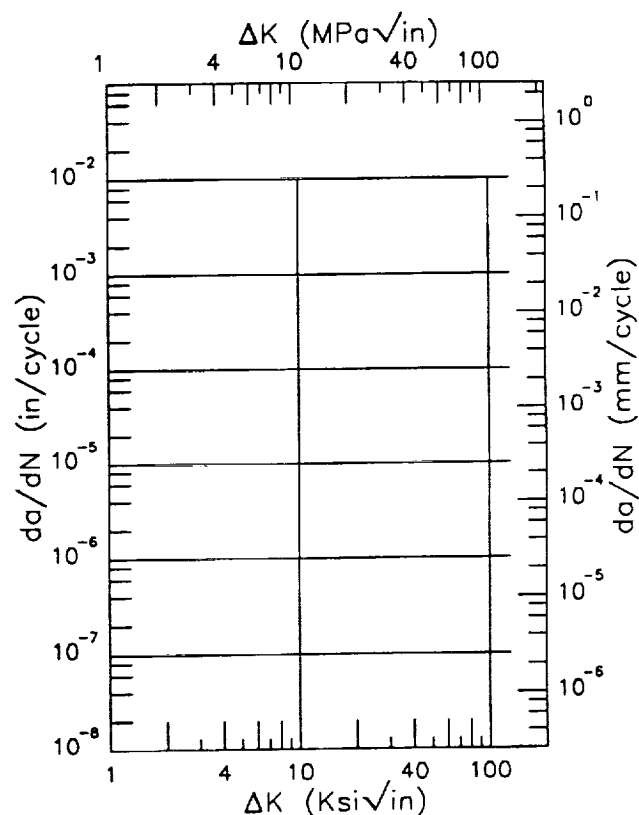
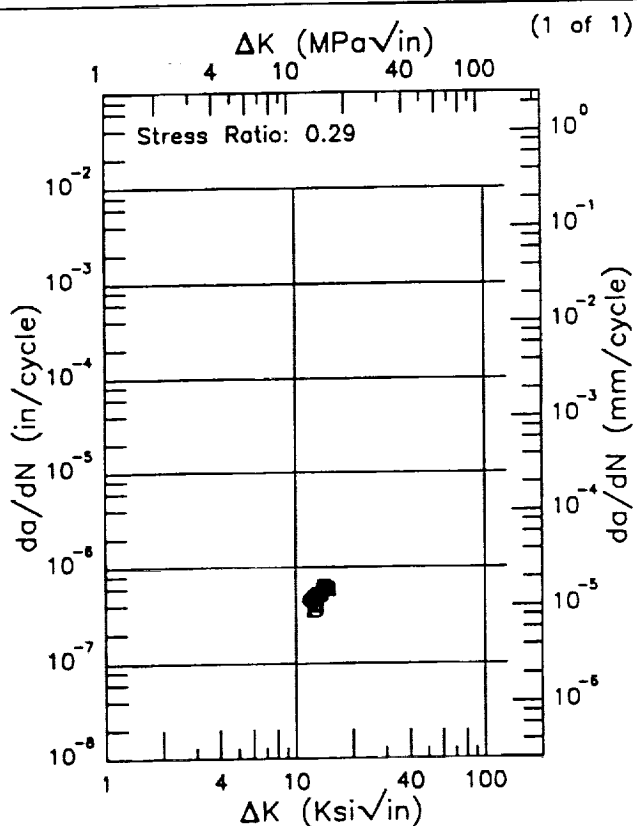
RMS %  
Error

Life Prediction Ratio Summary

0.    .5    .8    1.25    2. ---

Condition/Ht: AS - CAST, WAS  
 Form:  
 Specimen Type: CT  
 Orientation: C-L  
 Frequency: 1 Hz  
 Environment: PWR WATER; 450°F

Yield Strength: 43.9 ksi  
 Ult. Strength: 81.2 ksi  
 Specimen Thk: 2 in.  
 Specimen Width: 4 in.  
 Ref: EPMEA

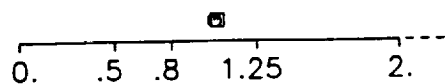


ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
11.62 (min)	0.432
13.	0.439
14.80 (max)	0.584

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)

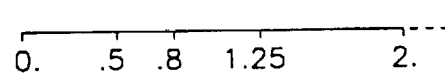
RMS %  
 Error  
 10.50

Life Prediction Ratio Summary



RMS %  
 Error

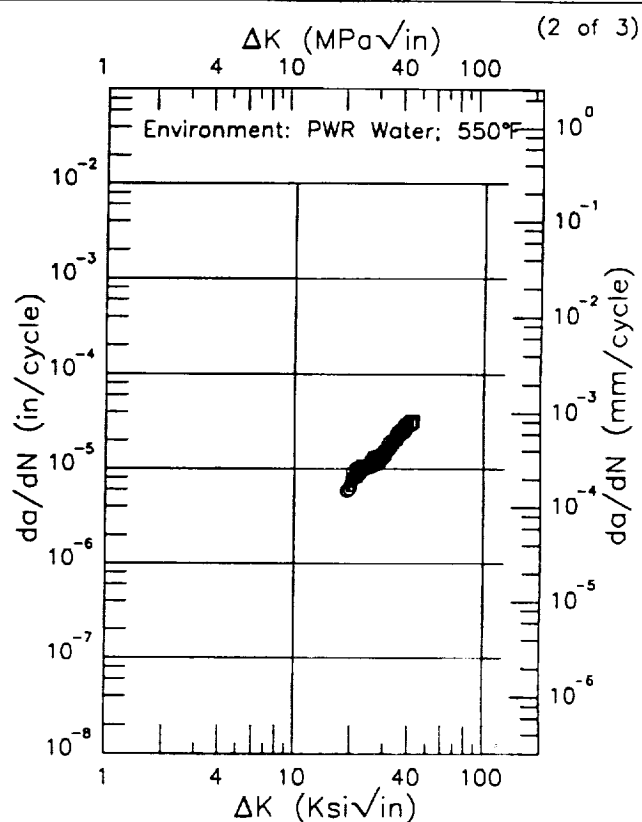
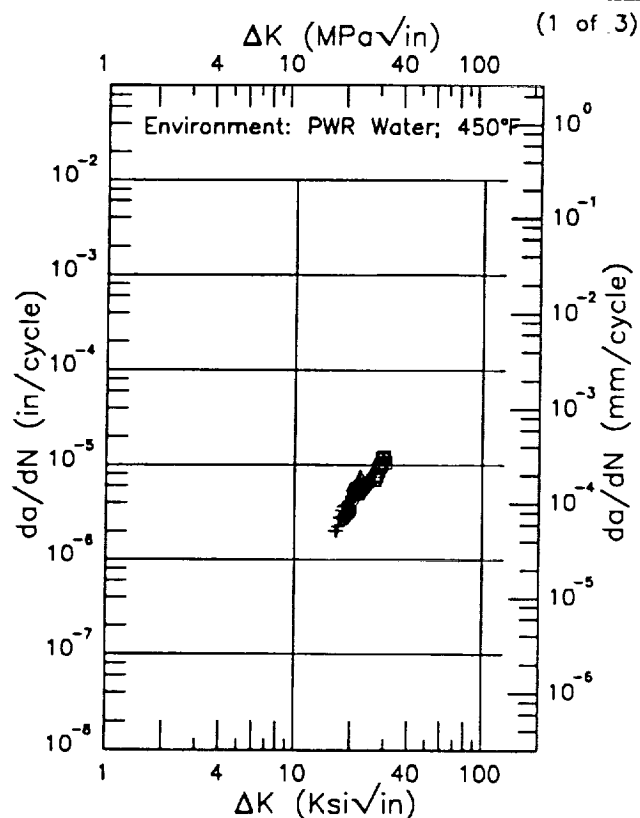
Life Prediction Ratio Summary



E CF8A

Condition/Ht: AS - CAST, WAS  
 Form:  
 Specimen Type: CT  
 Orientation: C-L  
 Stress Ratio: 0.2  
 Frequency: 0. Hz

Yield Strength: 43.9 ksi  
 Ult. Strength: 81.2 ksi  
 Specimen Thk: 2 in.  
 Specimen Width: 4 in.  
 Ref: EPMEA



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
16.49 (min)	2.07
20.	4.45
25.	6.49
30.	12.1
30.03 (max)	12.2

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
18.96 (min)	5.77
20.	7.12
25.	11.1
30.	14.4
35.	22.0
40.	29.8
41.86 (max)	30.9

RMS %  
 Error  
 12.46

Life Prediction Ratio Summary  

 0. .5 .8 1.25 2.

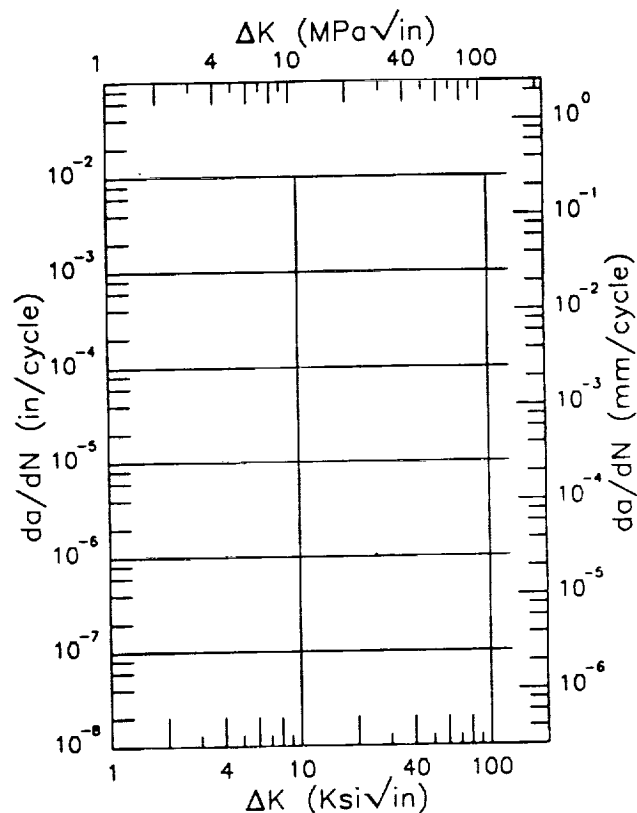
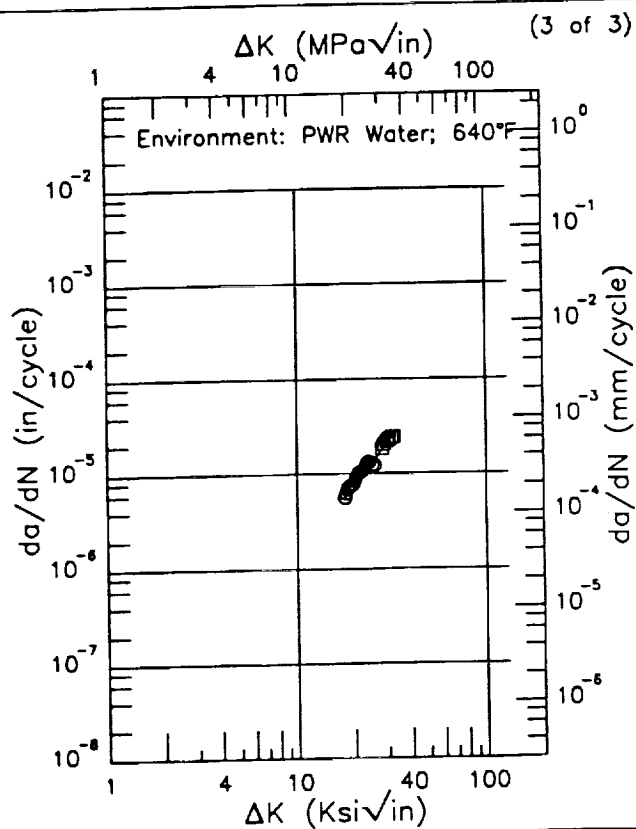
RMS %  
 Error  
 5.85

Life Prediction Ratio Summary  

 0. .5 .8 1.25 2.

Condition/Ht: AS - CAST, WAS  
 Form:  
 Specimen Type: CT  
 Orientation: C-L  
 Stress Ratio: 0.2  
 Frequency: 0. Hz

Yield Strength: 43.9 ksi  
 Ult. Strength: 81.2 ksi  
 Specimen Thk: 2 in.  
 Specimen Width: 4 in.  
 Ref: EPMEA

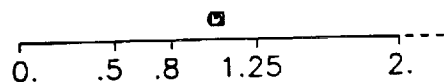


$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
17.83 (min)	6.03
20.	8.52
25.	13.2
30.	20.8
32.18 (max)	27.2

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
--------------------------------------	-----------------------------------

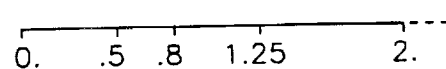
RMS %  
 Error  
 6.90

Life Prediction Ratio Summary



RMS %  
 Error

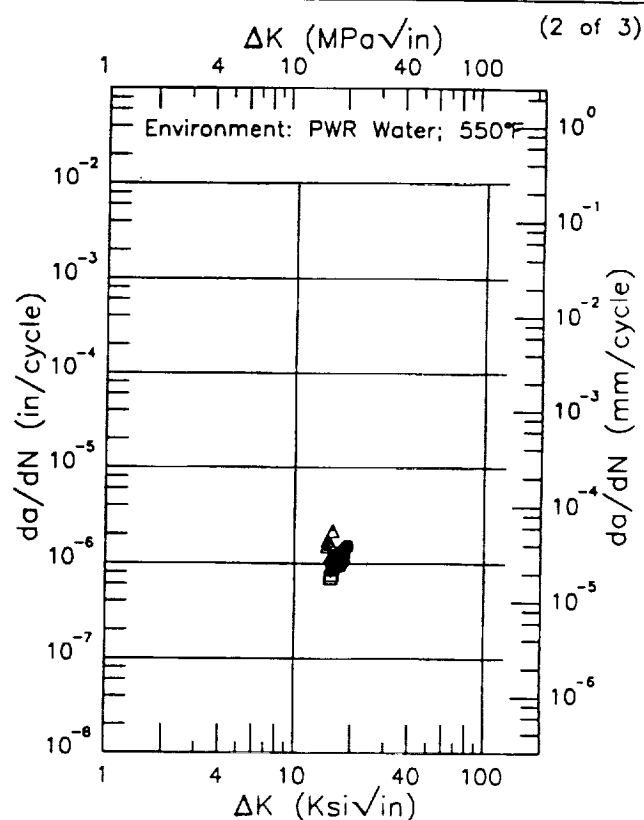
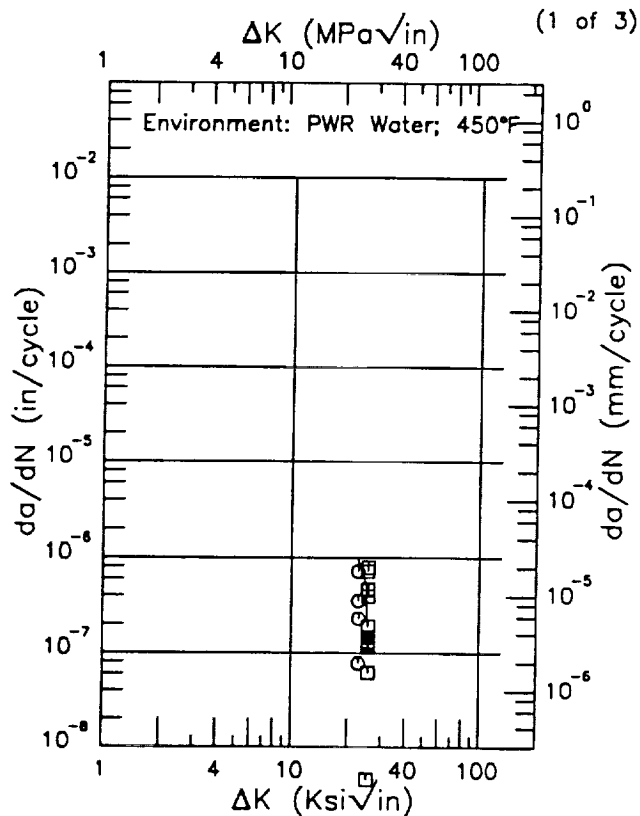
Life Prediction Ratio Summary



E | CF8A |

Condition/Ht: AS - CAST, WAS  
 Form:  
 Specimen Type: CT  
 Orientation: C-L  
 Stress Ratio: 0.2  
 Frequency: 1 Hz

Yield Strength: 43.9 ksi  
 Ult. Strength: 81.2 ksi  
 Specimen Thk: 2 in.  
 Specimen Width: 4 in.  
 Ref: EPMEA



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
22.44 (min)	0.989
25	0.519
25.56 (max)	0.186

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
14.73 (min)	1.72
16	0.994
18.89 (max)	1.48

RMS %  
 Error  
 95.01

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

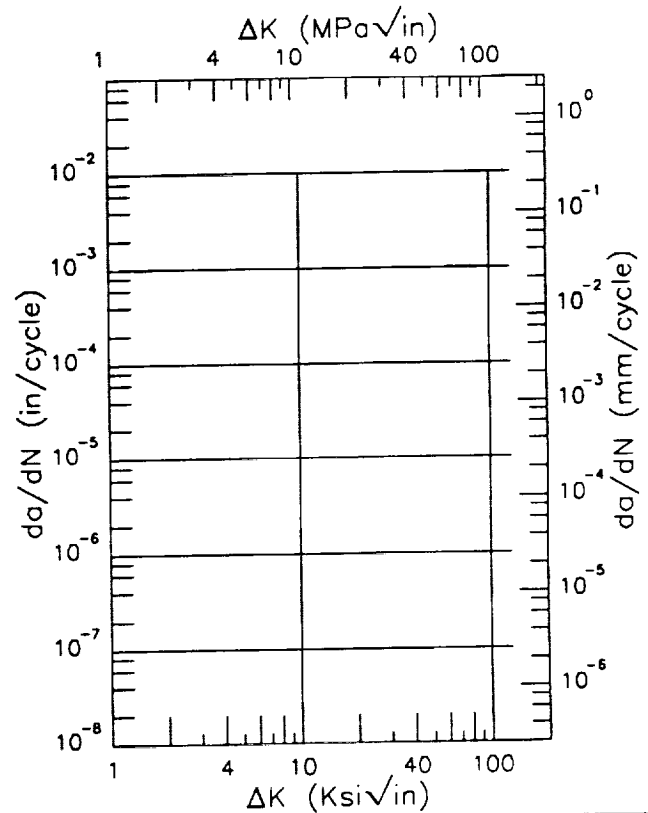
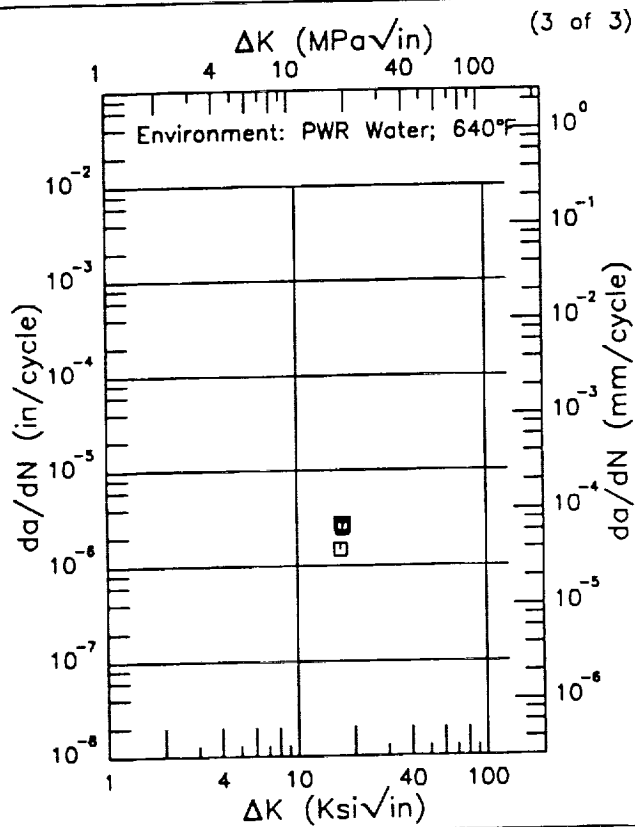
RMS %  
 Error  
 24.06

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

Condition/Ht: AS - CAST, WAS  
 Form:  
 Specimen Type: CT  
 Orientation: C-L  
 Stress Ratio: 0.2  
 Frequency: 1 Hz

Yield Strength: 43.9 ksi  
 Ult. Strength: 81.2 ksi  
 Specimen Thk: 2 in.  
 Specimen Width: 4 in.  
 Ref: EPMEA



$\Delta K$  (Ksi $\sqrt{\text{in}}$ )      da/dN ( $10^{-6}$  in/cycle)

$\Delta K$  (Ksi $\sqrt{\text{in}}$ )      da/dN ( $10^{-6}$  in/cycle)

RMS %  
Error

Life Prediction Ratio Summary

0.    .5    .8    1.25    2. ---

RMS %  
Error

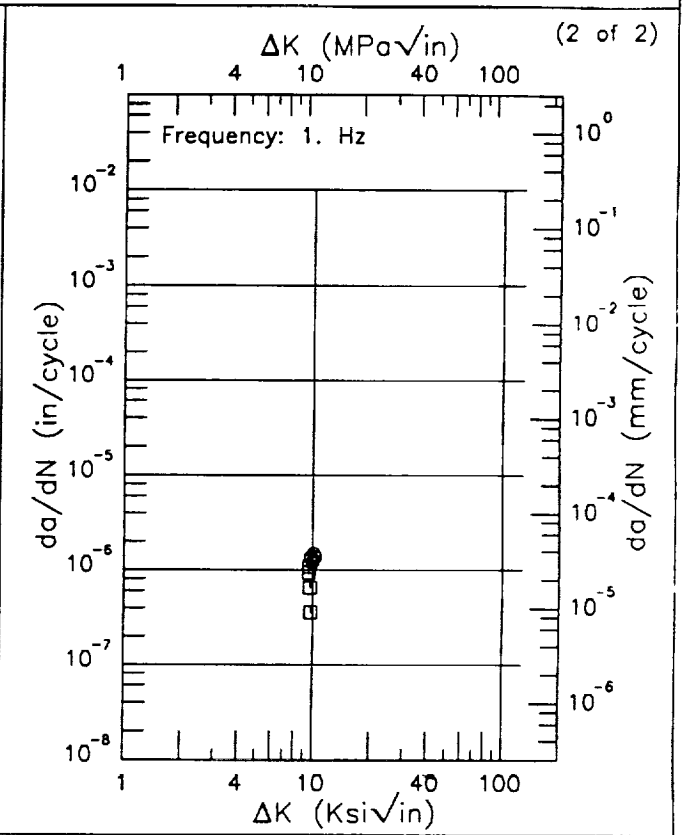
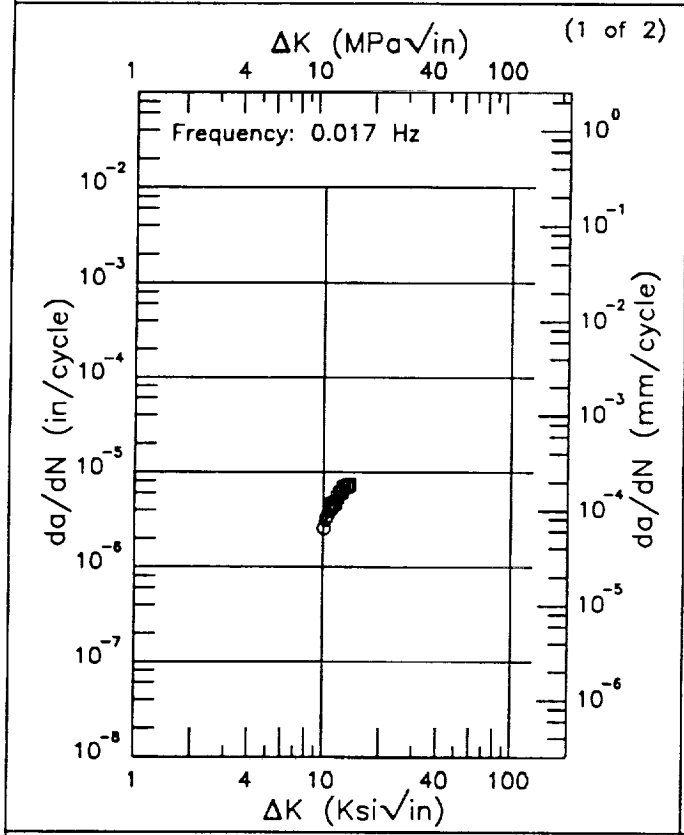
Life Prediction Ratio Summary

0.    .5    .8    1.25    2. ---

F | CF8A |

Condition/Ht: AS - CAST, WAS  
 Form:  
 Specimen Type: CT  
 Orientation: C-L  
 Stress Ratio: 0.7  
 Environment: PWR WATER;550°F

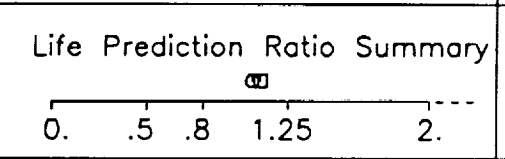
Yield Strength: 43.9 ksi  
 Ult. Strength: 81.2 ksi  
 Specimen Thk: 2 in.  
 Specimen Width: 4 in.  
 Ref: EPMEA



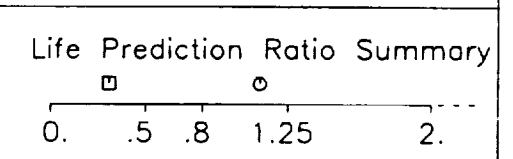
$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
10.04 (min)	2.73
13.	6.80
13.54 (max)	7.48

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
9.51 (min)	0.930
10.	1.35
10.31 (max)	1.34

RMS %  
 Error  
 11.74



RMS %  
 Error  
 27.05



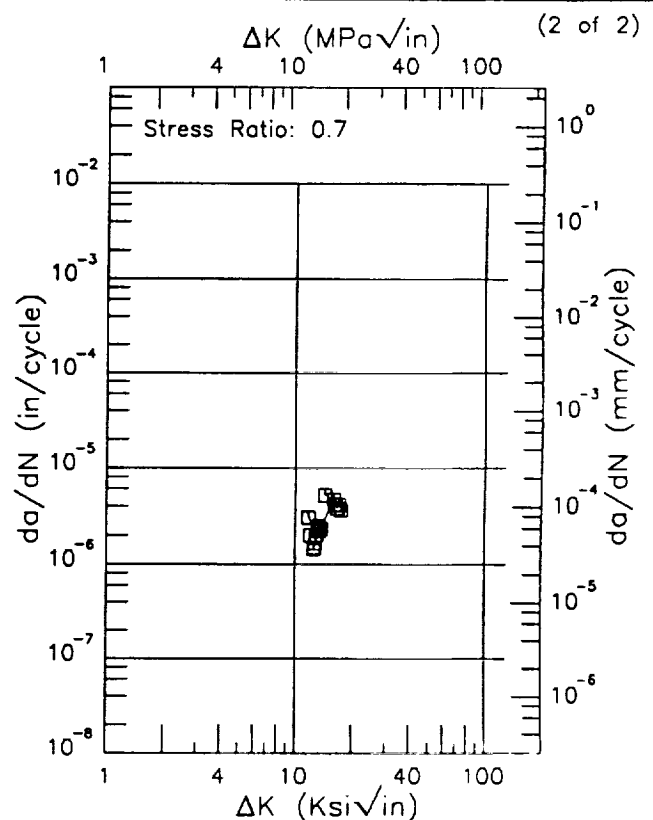
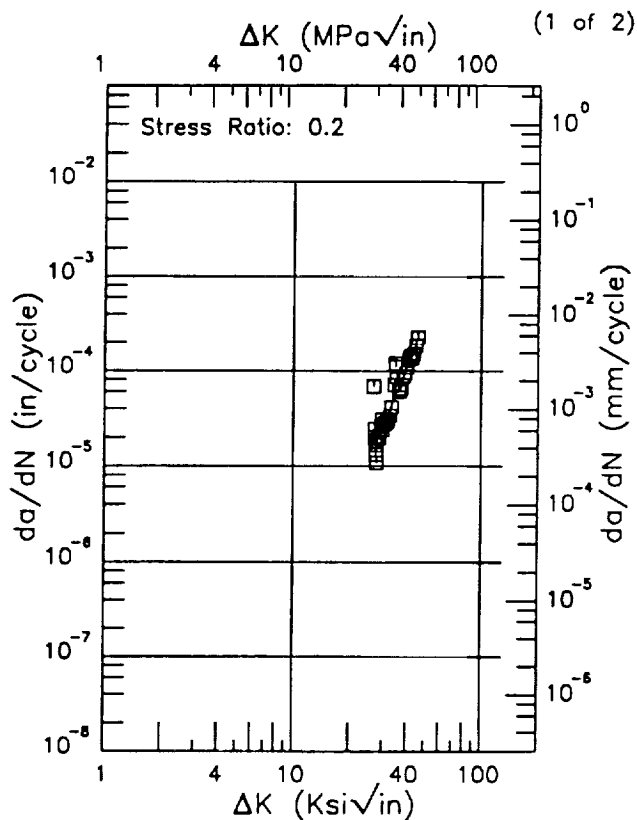
A1-152



R | CF8M |

Condition/Ht: ANNEALED AT 1121(C) FOR  
 Form:  
 Specimen Type: CT  
 Orientation:  
 Frequency: 0.3 Hz  
 Environment: PWR WATER;550°F

Yield Strength: 22.9 ksi  
 Ult. Strength: 64.6 ksi  
 Specimen Thk: 2 in.  
 Specimen Width: 5.11 in.  
 Ref: EPWHS



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
26.47 (min)	21.0
30.	26.7
35.	57.2
40.	117.
45.52 (max)	175.

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
11.64 (min)	3.48
13.	1.82
16.	4.79
17.39 (max)	4.16

RMS %  
 Error  
 45.91

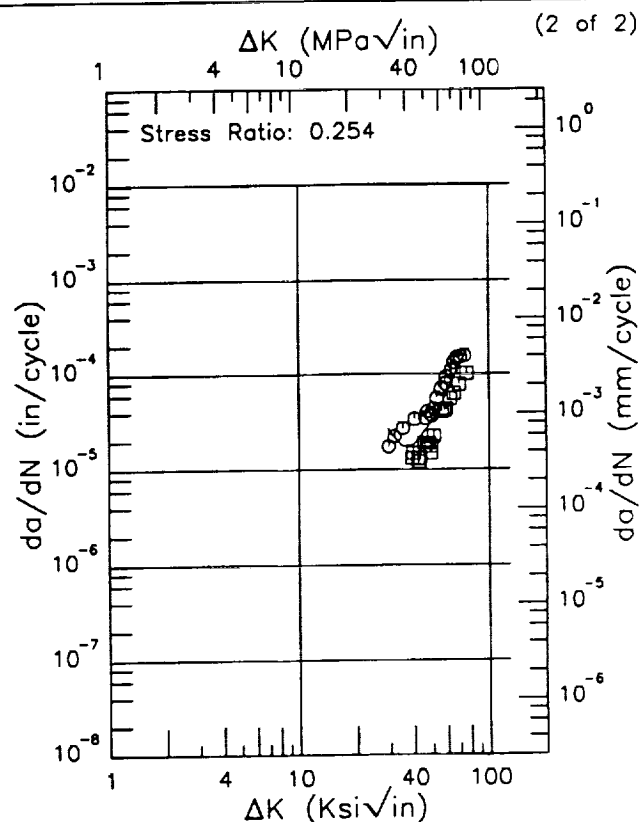
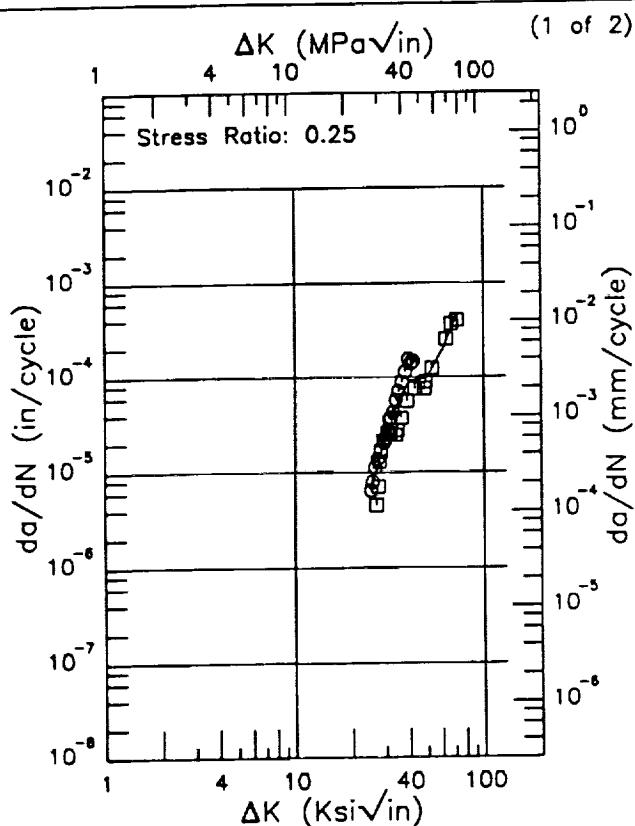
Life Prediction Ratio Summary  
 0. .5 .8 1.25 2.

RMS %  
 Error  
 25.78

Life Prediction Ratio Summary  
 0. .5 .8 1.25 2.

Condition/Ht: ANNEALED AT 1121(C) FOR  
 Form:  
 Specimen Type: CT  
 Orientation:  
 Frequency: 1 Hz  
 Environment: PWR WATER;550°F

Yield Strength: 24.8 ksi  
 Ult. Strength: 68.1 ksi  
 Specimen Thk: 2 in.  
 Specimen Width: 5.11 in.  
 Ref: EPWHS

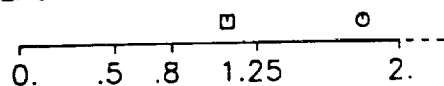


ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
25.03 (min)	6.47
30.	21.7
35.	55.8
40.	91.6
50.	98.9
60.	188.
70.	397.
72.01 (max)	390.

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
29.44 (min)	27.3
30.	25.3
35.	17.7
40.	18.3
50.	32.0
60.	65.6
70.	124.
76.17 (max)	171.

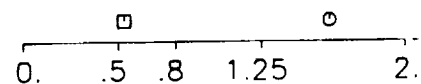
RMS %  
 Error  
 29.80

Life Prediction Ratio Summary



RMS %  
 Error  
 36.84

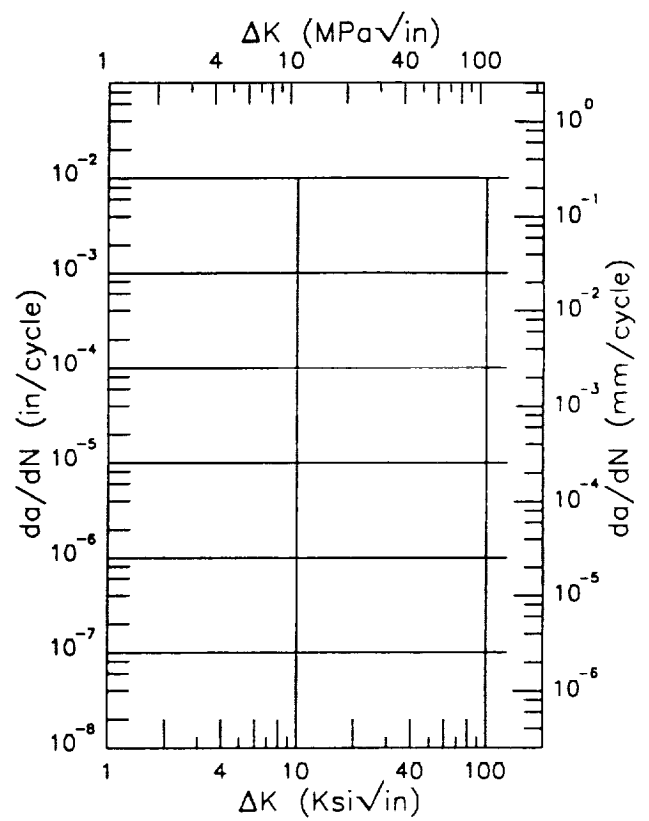
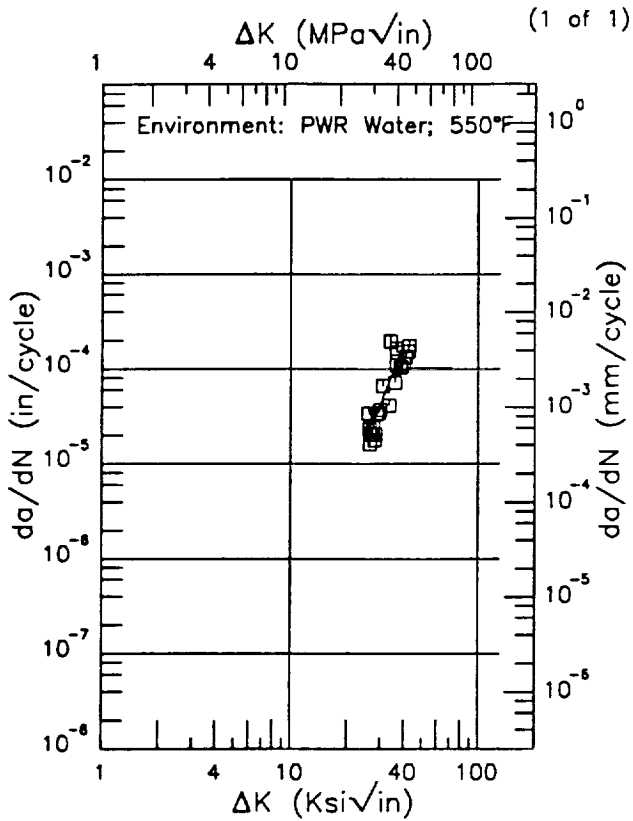
Life Prediction Ratio Summary



E | CF8M |

Condition/Ht: ANNEALED AT 1121(C) FOR  
 Form:  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.2  
 Frequency: 0.2 Hz

Yield Strength: 22.9 ksi  
 Ult. Strength: 64.6 ksi  
 Specimen Thk: 2 in.  
 Specimen Width: 5.11 in.  
 Ref: EPWHS



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
25.82 (min)	22.7
30.	42.2
35.	94.5
40.	120.
42.50 (max)	163.

$\Delta K$  (Ksi $\sqrt{\text{in}}$ )       $da/dN$  ( $10^{-6}$  in/cycle)

RMS %  
 Error  
 40.59

Life Prediction Ratio Summary

0. .5 .8 1.25 2.---

RMS %  
 Error

Life Prediction Ratio Summary

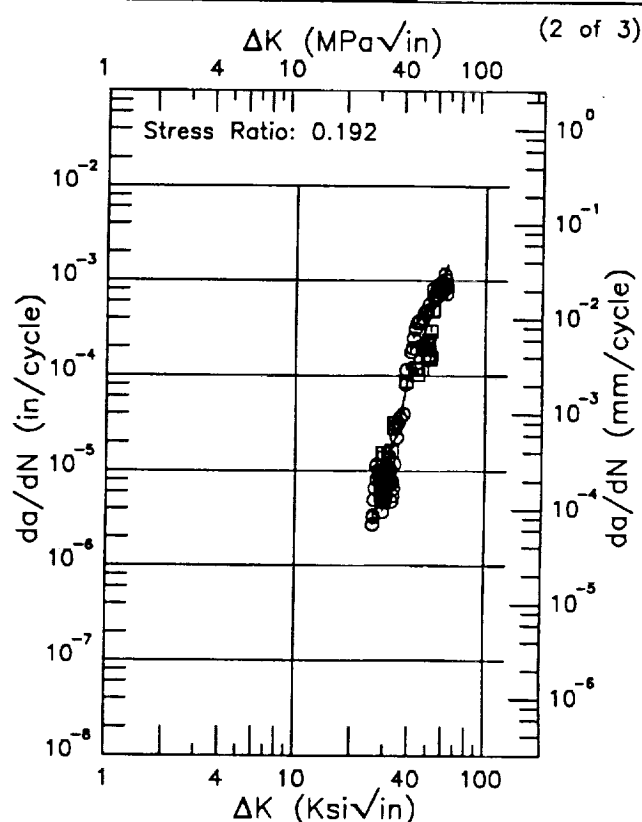
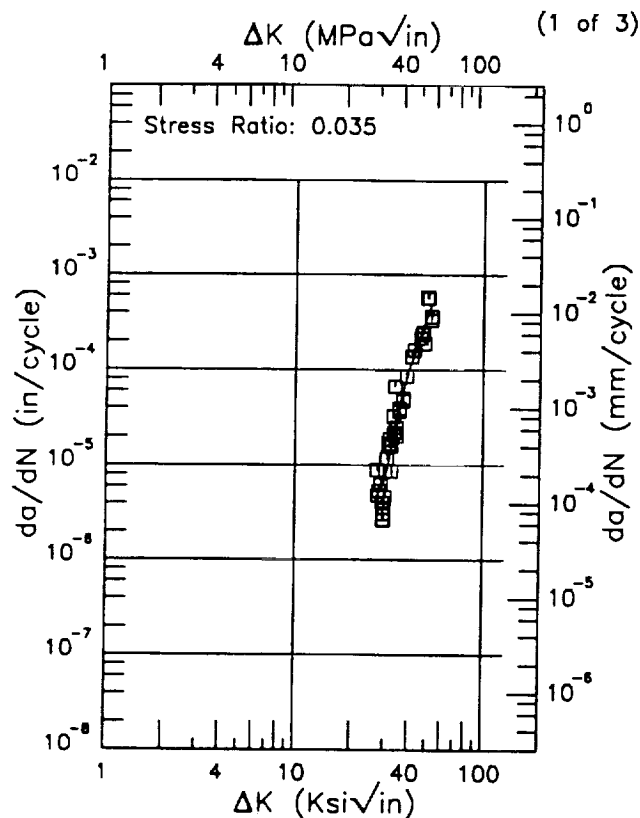
0. .5 .8 1.25 2.---

A1-156

R CF8M

Condition/Ht: ANNEALED AT 1121(C) FOR  
 Form: Casting  
 Specimen Type: CT  
 Orientation:  
 Frequency: 1 Hz  
 Environment: LAB AIR;550°F

Yield Strength: 45.2 ksi  
 Ult. Strength: 100.3 ksi  
 Specimen Thk: 2 in.  
 Specimen Width: 5.11 in.  
 Ref: EPWHS



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
27.19 (min)	4.80
30.	7.21
35.	37.4
40.	102.
50.	378.
52.33 (max)	483.

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
25.68 (min)	7.19
30.	8.64
35.	30.2
40.	110.
50.	365.
60.	905.
62.78 (max)	1481.

RMS %  
 Error  
 43.67

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

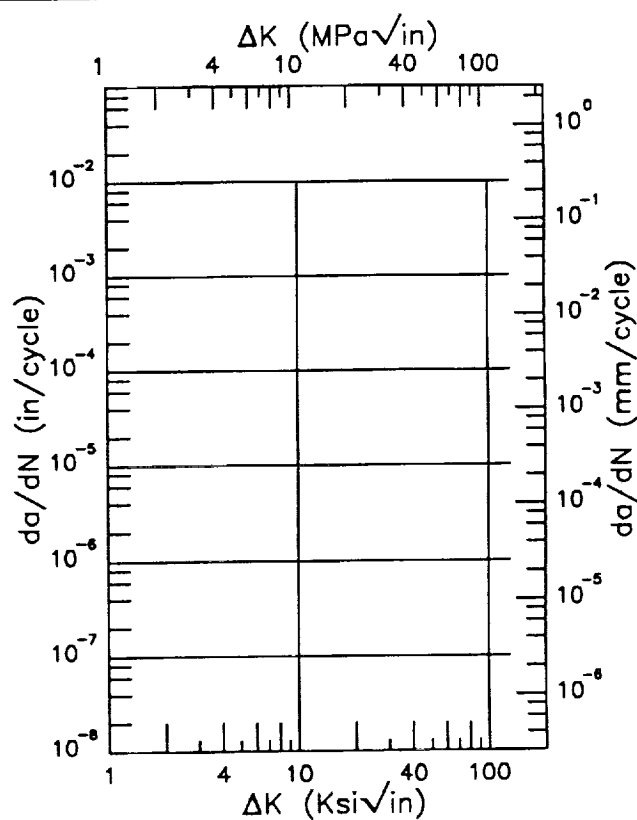
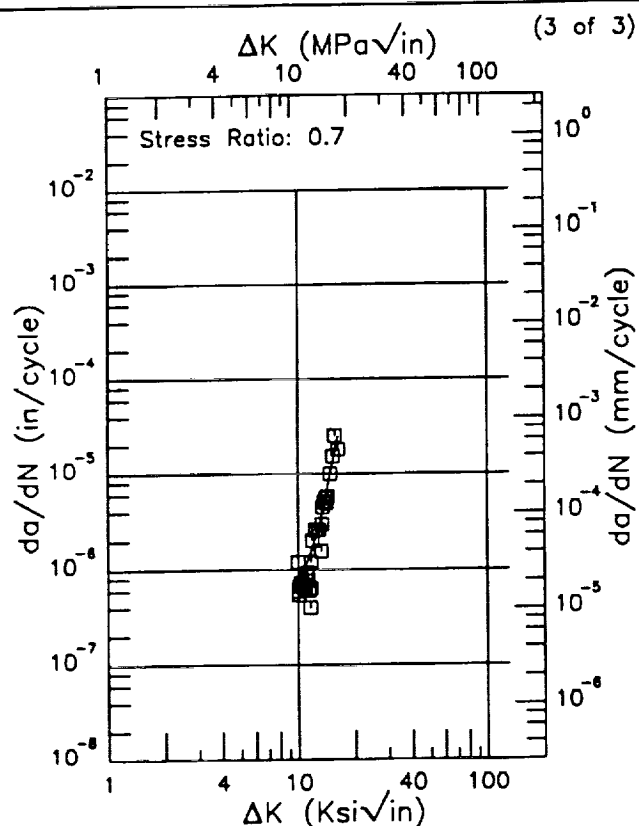
RMS %  
 Error  
 41.70

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

Condition/Ht: ANNEALED AT 1121(C) FOR  
 Form: Casting  
 Specimen Type: CT  
 Orientation:  
 Frequency: 1 Hz  
 Environment: LAB AIR;550°F

Yield Strength: 45.2 ksi  
 Ult. Strength: 100.3 ksi  
 Specimen Thk: 2 in.  
 Specimen Width: 5.11 in.  
 Ref: EPWHS



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
9.92 (min)	0.632
10.	0.634
13.	2.81
16.	22.6
16.21 (max)	25.1

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
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RMS %  
 Error  
 33.14

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS %  
 Error

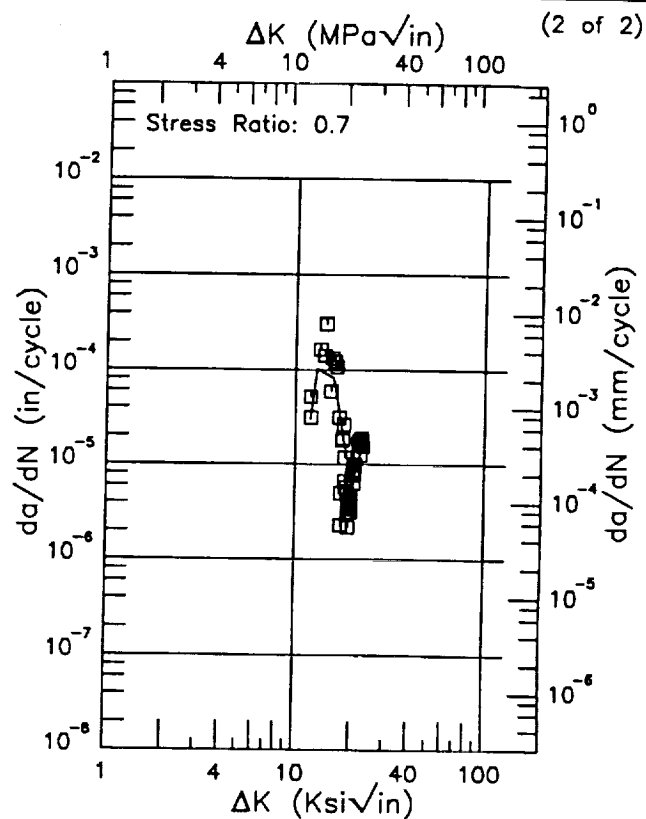
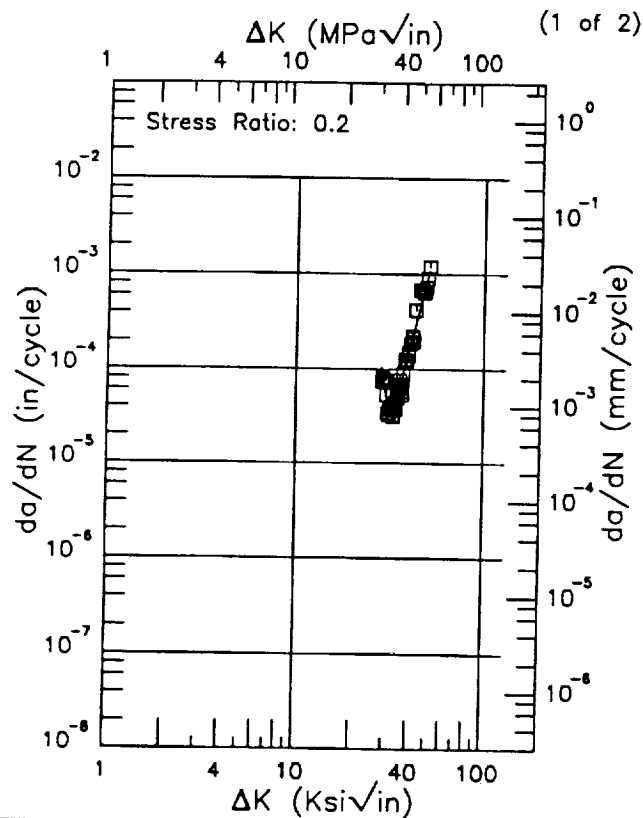
Life Prediction Ratio Summary

0. .5 .8 1.25 2.

R | CF8M |

Condition/Ht: ANNEALED AT 1121(C) FOR  
 Form: Casting  
 Specimen Type: CT  
 Orientation:  
 Frequency: 0. Hz  
 Environment: PWR WATER;550°F

Yield Strength: 45.2 ksi  
 Ult. Strength: 100.3 ksi  
 Specimen Thk: 2 in.  
 Specimen Width: 5.11 in.  
 Ref: EPWHS



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
28.37 (min)	107.
30.	49.3
35.	54.1
40.	176.
50.	1001.
50.36 (max)	1092.

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
11.99 (min)	29.9
13.	104.
16.	81.8
20.	6.02
22.80 (max)	17.6

RMS %  
 Error  
 22.07

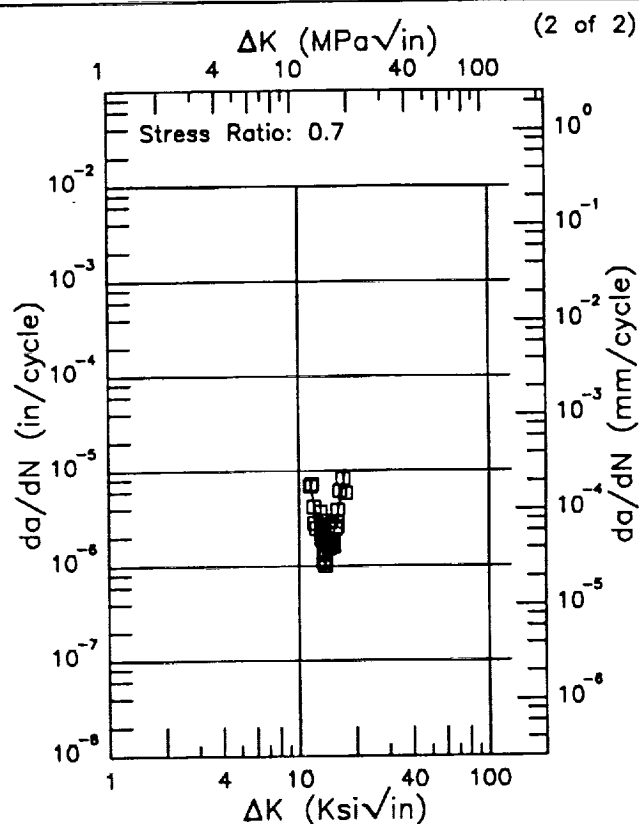
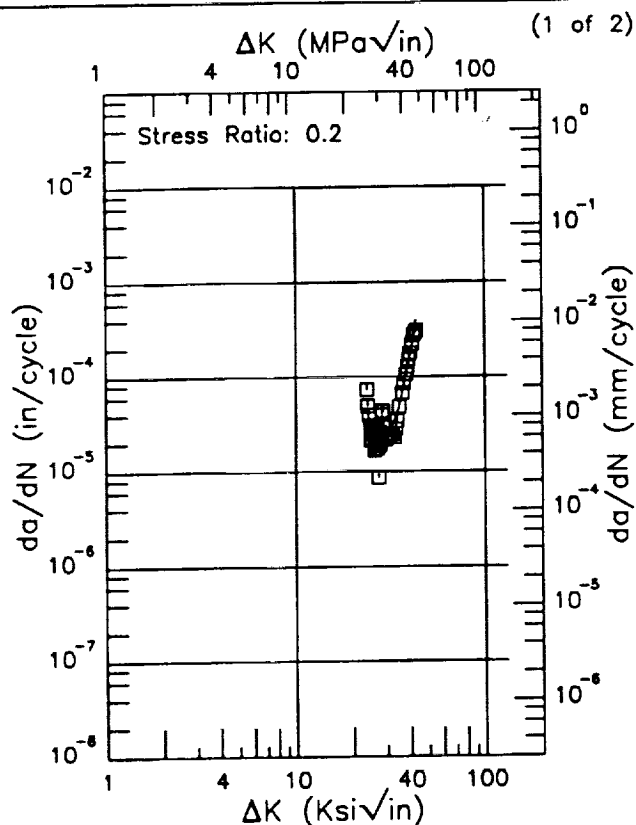
Life Prediction Ratio Summary  
 0. .5 .8 1.25 2. ---

RMS %  
 Error  
 59.68

Life Prediction Ratio Summary  
 0. .5 .8 1.25 2. ---

Condition/Ht: ANNEALED AT 1121(C) FOR  
 Form: Casting  
 Specimen Type: CT  
 Orientation:  
 Frequency: 0.3 Hz  
 Environment: PWR WATER;550°F

Yield Strength: 45.2 ksi  
 Ult. Strength: 100.3 ksi  
 Specimen Thk: 2 in.  
 Specimen Width: 5.11 in.  
 Ref: EPWHS

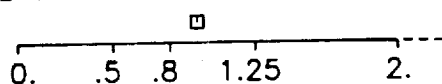


ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
23.60 (min)	45.1
25.	28.7
30.	21.4
35.	48.4
40.	170.
43.10 (max)	395.

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
11.48 (min)	7.24
13.	2.14
16.	3.40
17.51 (max)	10.2

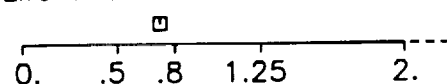
RMS %  
 Error  
 27.63

Life Prediction Ratio Summary



RMS %  
 Error  
 33.43

Life Prediction Ratio Summary

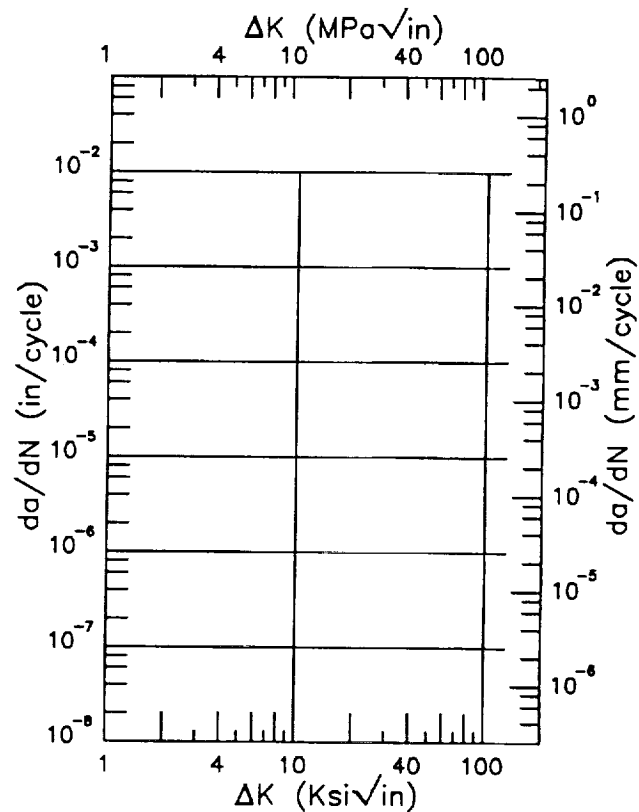
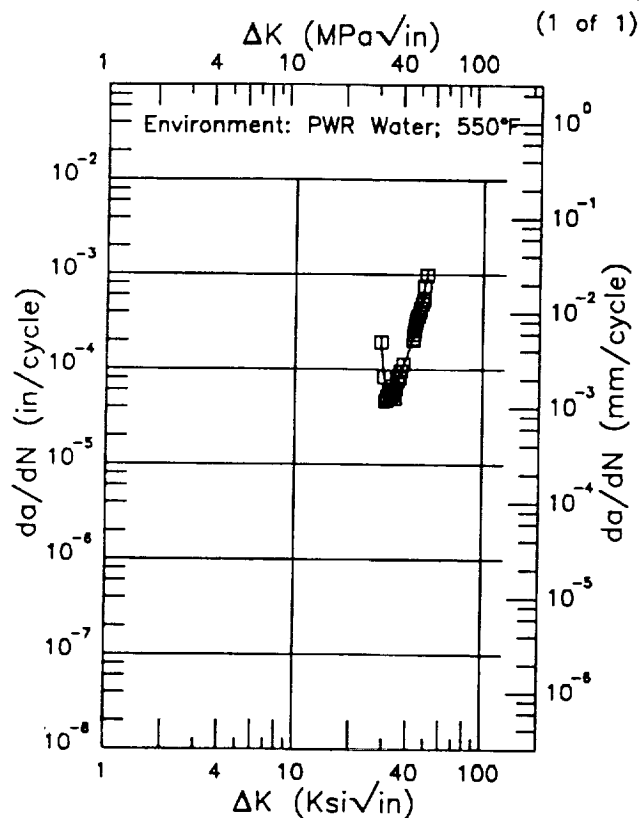




E | CF8M |

Condition/Ht: ANNEALED AT 1121(C) FOR  
 Form: Casting  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.2  
 Frequency: 0.2 Hz

Yield Strength: 45.2 ksi  
 Ult. Strength: 100.3 ksi  
 Specimen Thk: 2 in.  
 Specimen Width: 5.11 in.  
 Ref: EPWHS



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
28.51 (min)	186.
30.	64.9
35.	74.3
40.	160.
49.82 (max)	979.

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
---------------------	-------------------------------

RMS %  
 Error  
 17.82

Life Prediction Ratio Summary  
  
 0. .5 .8 1.25 2.

RMS %  
 Error

Life Prediction Ratio Summary  
  
 0. .5 .8 1.25 2.

Condition/Ht: -99

Form:

Specimen Type: CT

Orientation:

Stress Ratio: 0.1

Frequency: 10 Hz

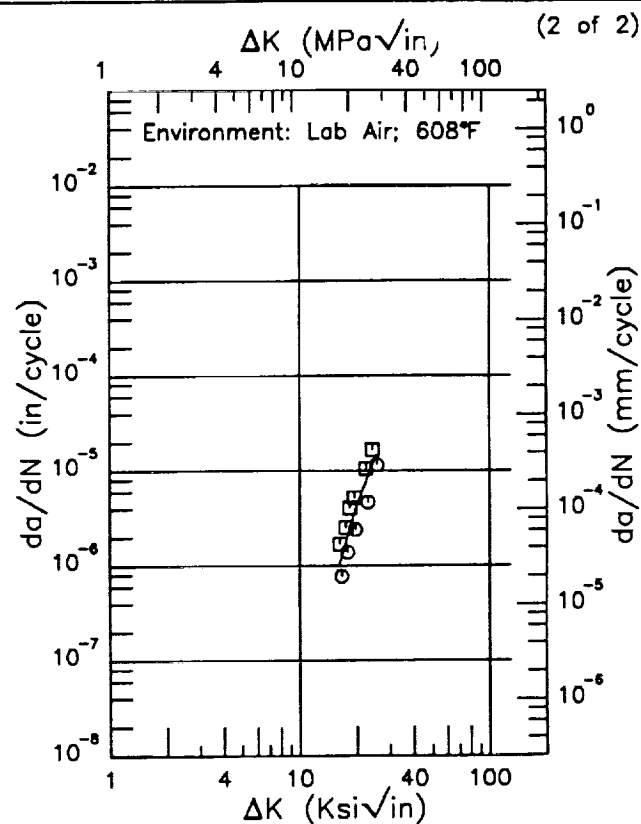
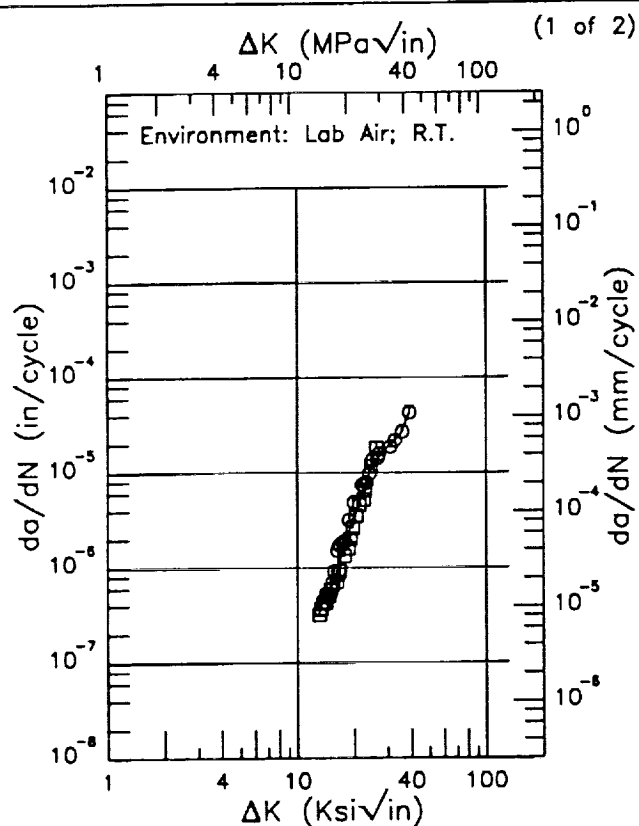
Yield Strength: 41.2 ksi

Ult. Strength: 67.8 ksi

Specimen Thk: 0.984 in.

Specimen Width: 1.969 in.

Ref: EPBER

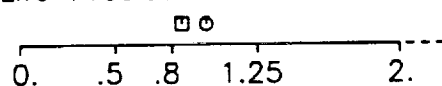


$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
12.92 (min)	0.354
13.	0.359
16.	0.865
20.	3.62
25.	12.2
30.	18.7
35.	25.5
39.02 (max)	41.9

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
16.26 (min)	1.03
20.	4.41
25.	13.8
25.34 (max)	14.6

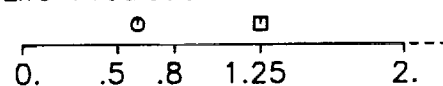
RMS %  
Error  
20.45

Life Prediction Ratio Summary



RMS %  
Error  
47.28

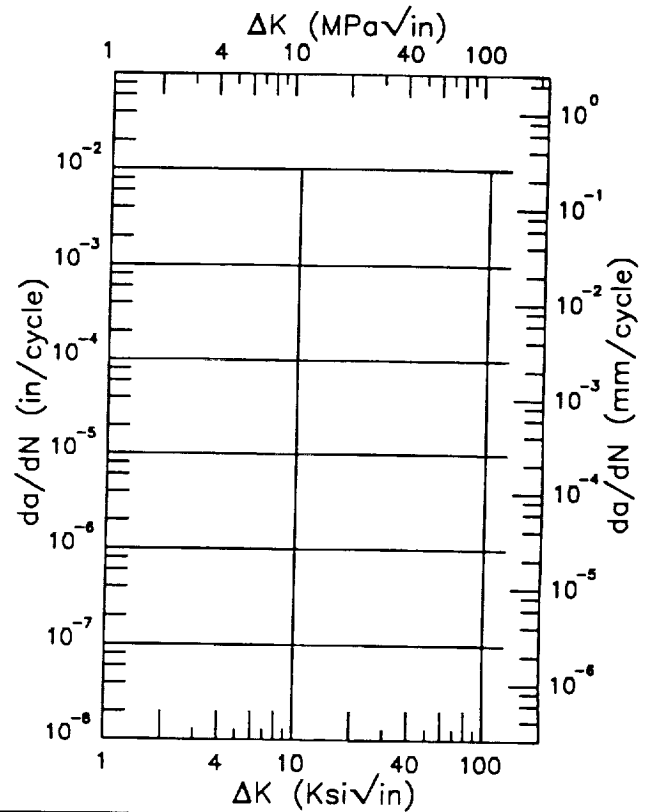
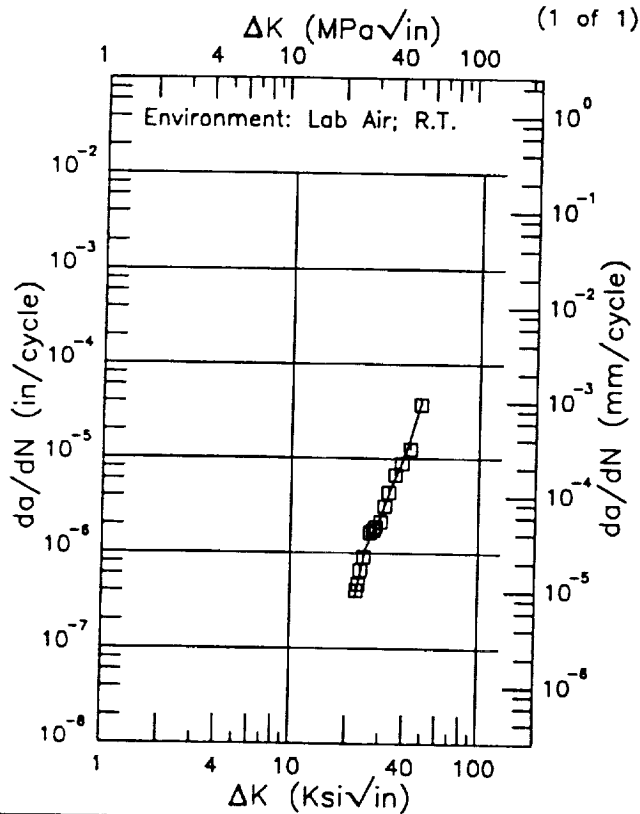
Life Prediction Ratio Summary



E | CF8M |

Condition/Ht: -99  
 Form:  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.1  
 Frequency: 20 Hz

Yield Strength: 42.5 ksi  
 Ult. Strength: 73.8 ksi  
 Specimen Thk: 0.787 in.  
 Specimen Width: 1.575 in.  
 Ref: EPBER



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
22.29 (min)	0.364
25	1.12
30	2.47
35	5.86
40	10.8
48.15 (max)	37.4

$\Delta K$  (Ksi√in)       $da/dN$  ( $10^{-6}$ in/cycle)

RMS %  
 Error  
 10.10

Life Prediction Ratio Summary  
 0. .5 .8 1.25 2. ---

RMS %  
 Error

Life Prediction Ratio Summary  
 0. .5 .8 1.25 2. ---

Condition/Ht: -99

Form:

Specimen Type: CT

Orientation:

Stress Ratio: 0.1

Frequency: 0. Hz

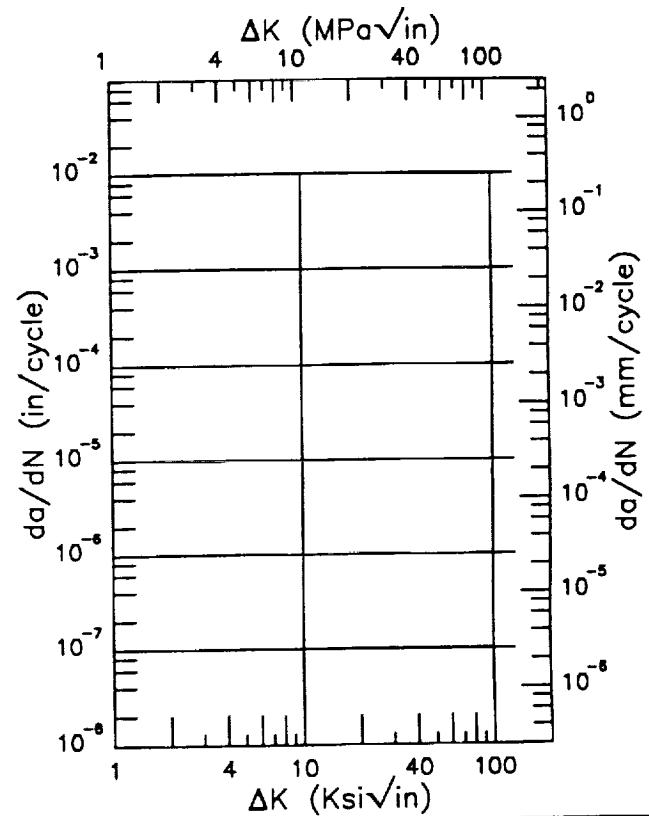
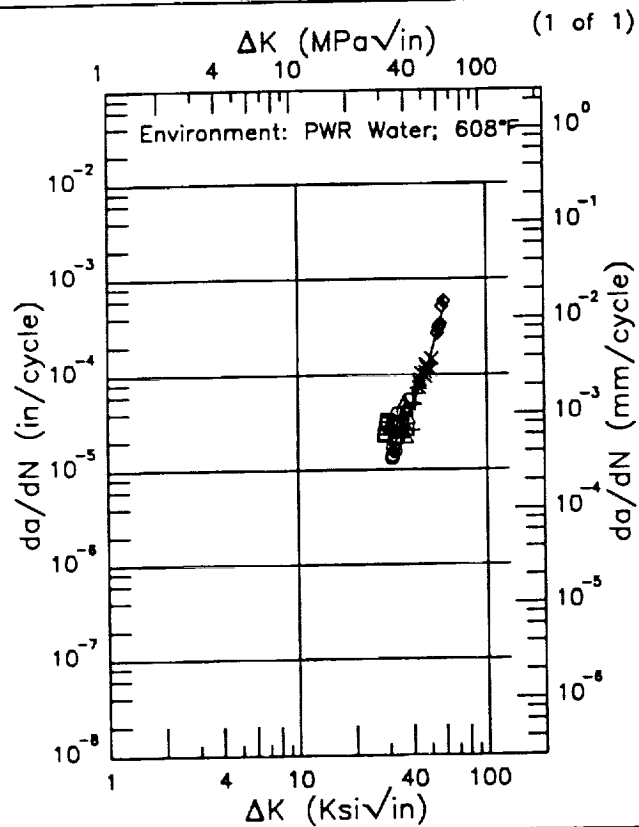
Yield Strength: 42.5 ksi

Ult. Strength: 73.8 ksi

Specimen Thk: 0.787 in.

Specimen Width: 3.937 in.

Ref: EPBER

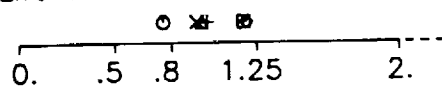


$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ (10 <sup>-6</sup> in/cycle)
28.38 (min)	25.0
30.	23.9
35.	28.7
40.	45.2
50.	151.
58.98 (max)	462.

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ (10 <sup>-6</sup> in/cycle)
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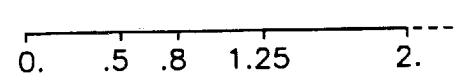
RMS %  
Error  
24.22

Life Prediction Ratio Summary



RMS %  
Error

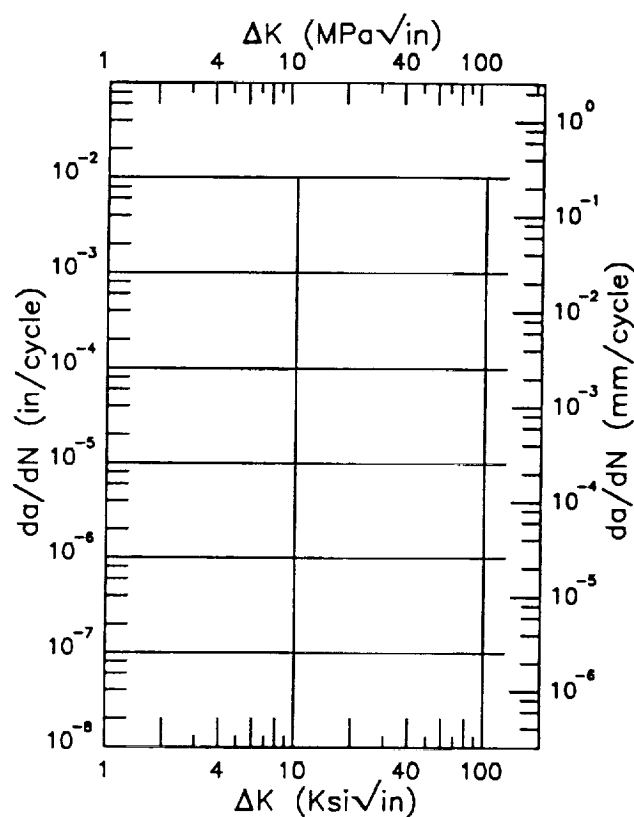
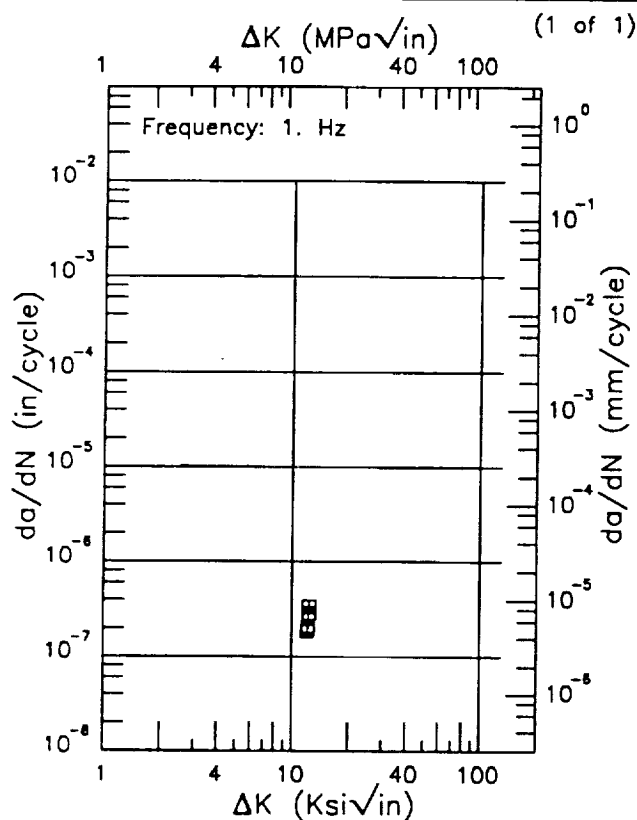
Life Prediction Ratio Summary



F | CF8M |

Condition/Ht: -99  
 Form:  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.1  
 Environment: LAB AIR; RT

Yield Strength: 41.2 ksi  
 Ult. Strength: 67.8 ksi  
 Specimen Thk: 0.984 in.  
 Specimen Width: 1.969 in.  
 Ref: EPBER



ΔK (Ksi√in)      da/dN (10<sup>-6</sup>in/cycle)

12.02 (min)      0.194

12.33 (max)      0.318

ΔK (Ksi√in)      da/dN (10<sup>-6</sup>in/cycle)

RMS %  
 Error  
 9.38

Life Prediction Ratio Summary

0.    .5    .8    1.25    2.---

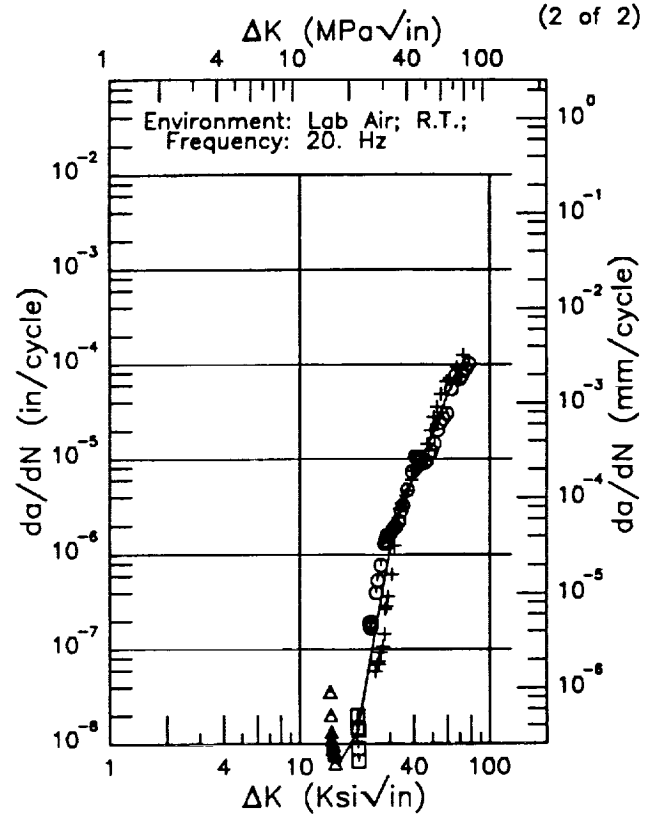
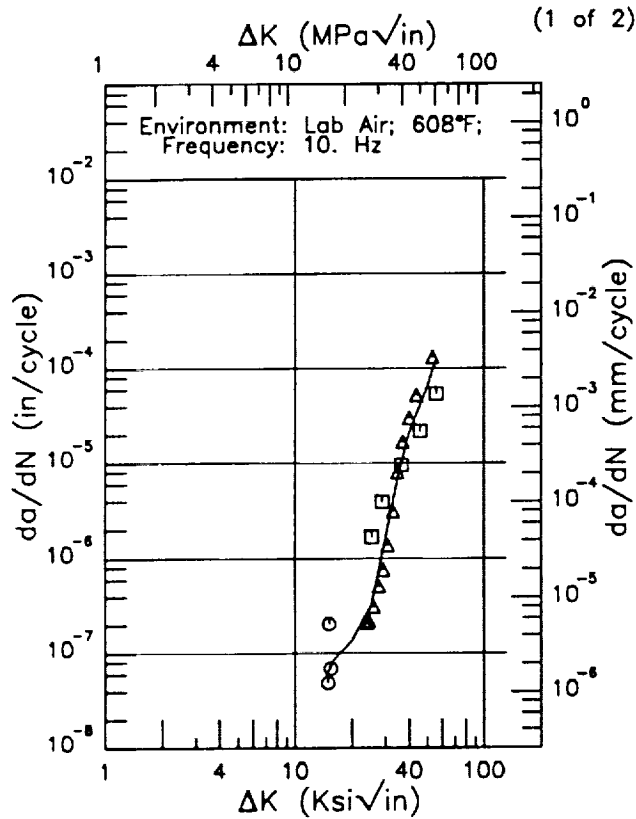
RMS %  
 Error

Life Prediction Ratio Summary

0.    .5    .8    1.25    2.---

Condition/Ht: -99  
 Form:  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.1

Yield Strength: 42.5 ksi  
 Ult. Strength: 73.8 ksi  
 Specimen Thk: 0.787 in.  
 Specimen Width: 3.937 in.  
 Ref: EPBER



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
14.85 (min)	0.0644
16.	0.0863
20.	0.136
25.	0.318
30.	1.63
35.	7.58
40.	21.2
50.	64.8
55.27 (max)	122.

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
14.46 (min)	0.0111
16.	0.00589
20.	0.0131
25.	0.149
30.	1.12
35.	3.42
40.	6.50
50.	18.2
60.	48.2
70.	87.7
77.67 (max)	96.0

RMS % Error  
 >100.0

Life Prediction Ratio Summary

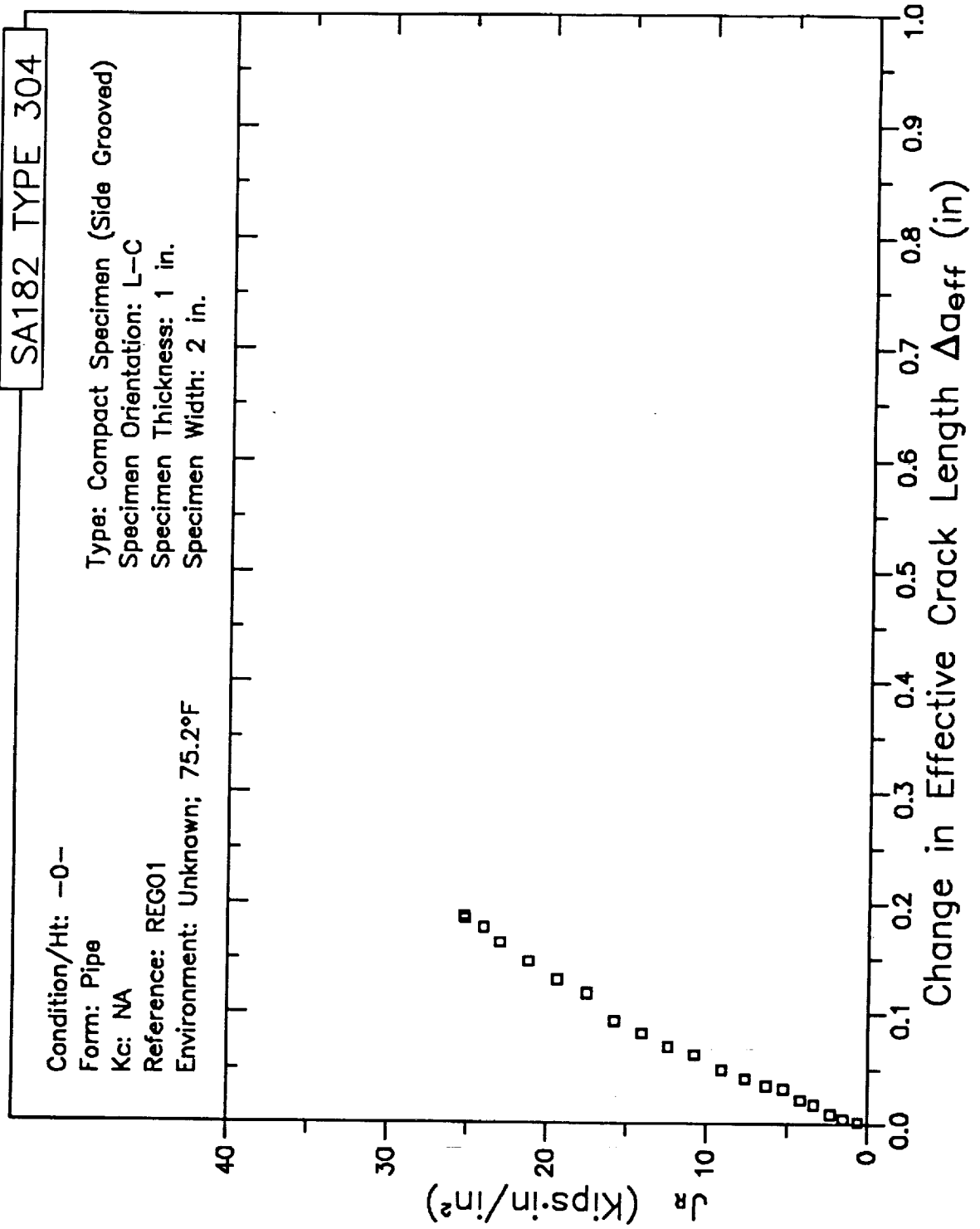
0. .5 .8 1.25 2. ---

RMS % Error  
 63.62

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

# RESISTANCE CURVE

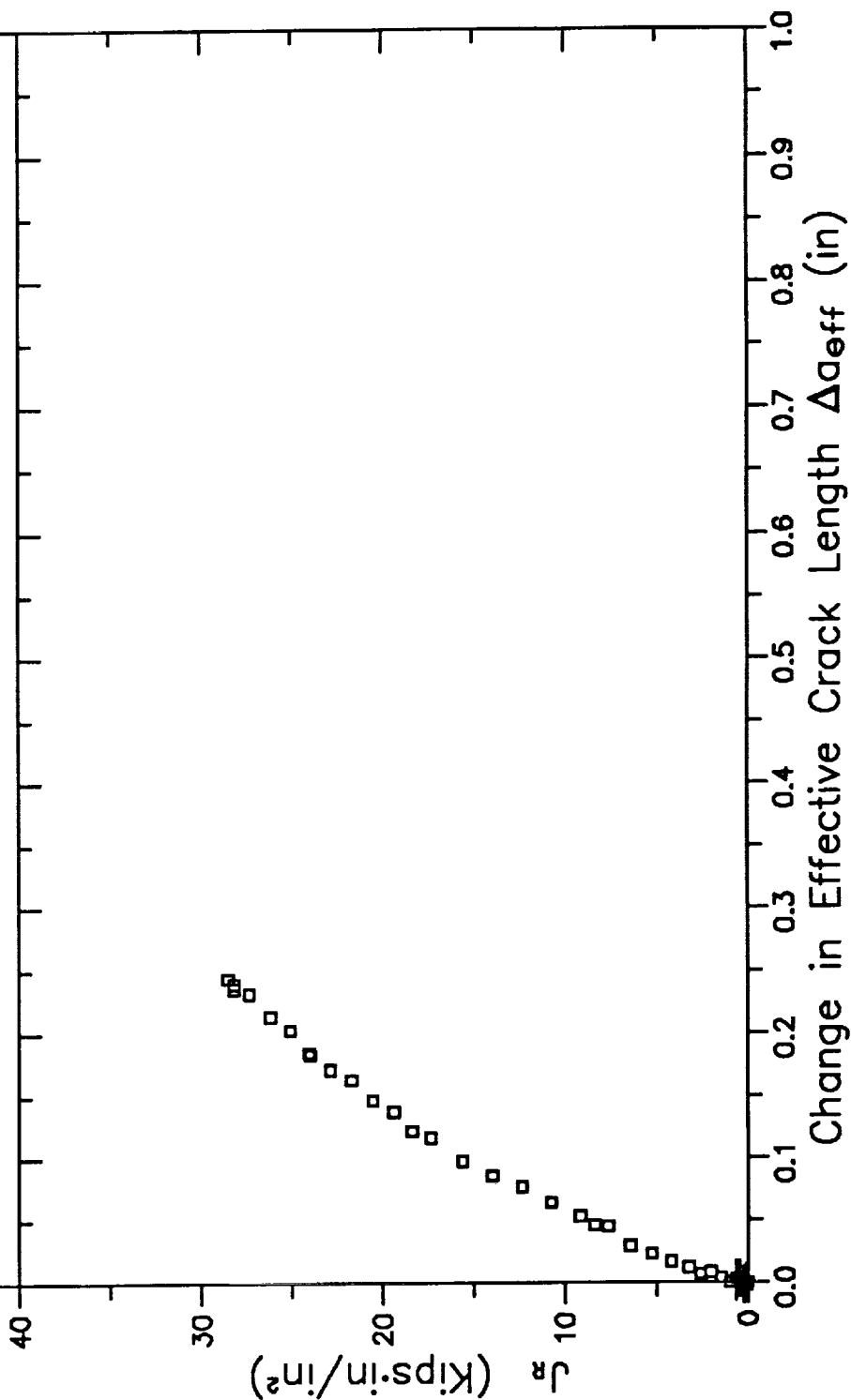


# RESISTANCE CURVE

SA182 TYPE 304

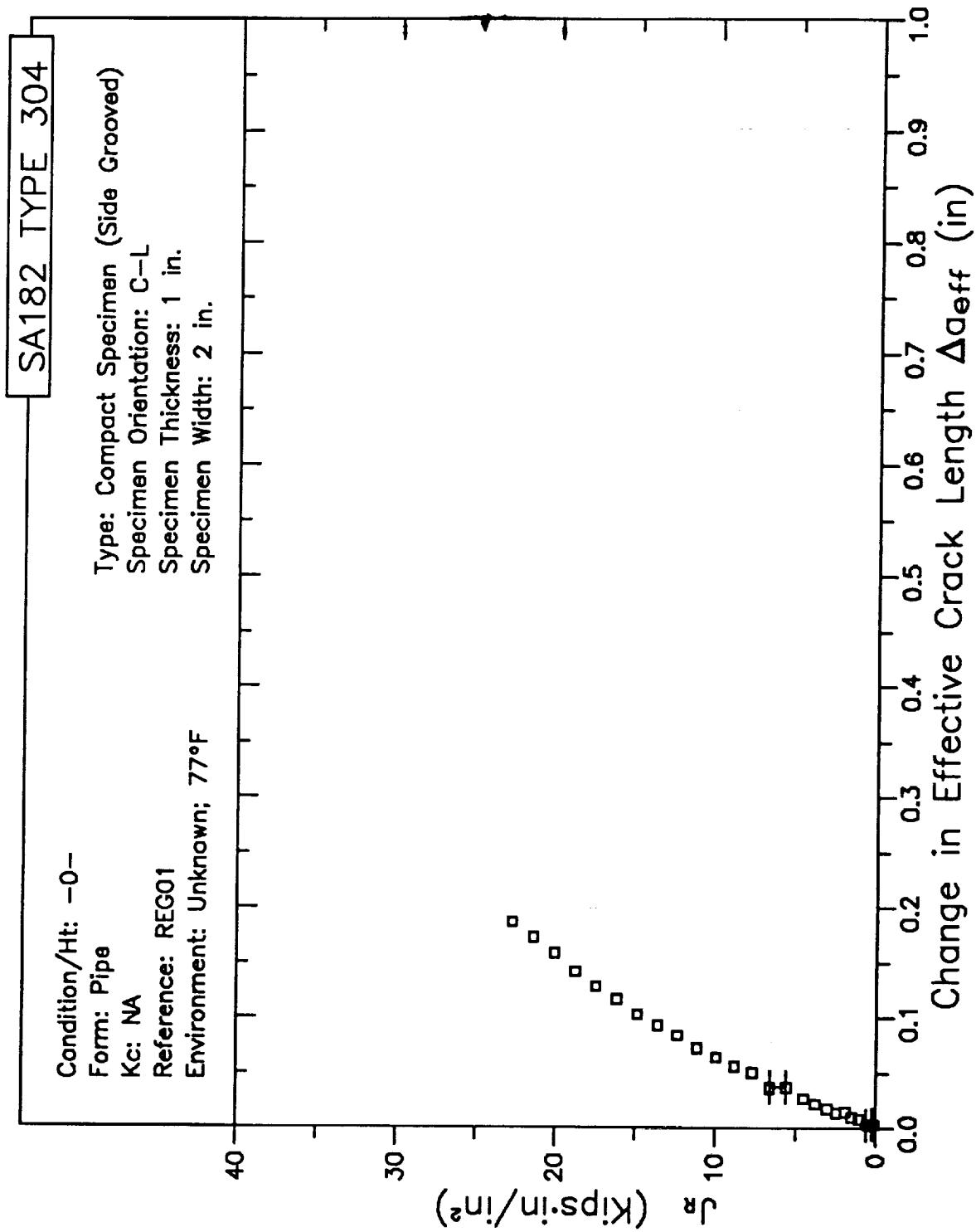
Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG01  
Environment: Unknown; 77°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 1 in.  
Specimen Width: 2 in.





# RESISTANCE CURVE

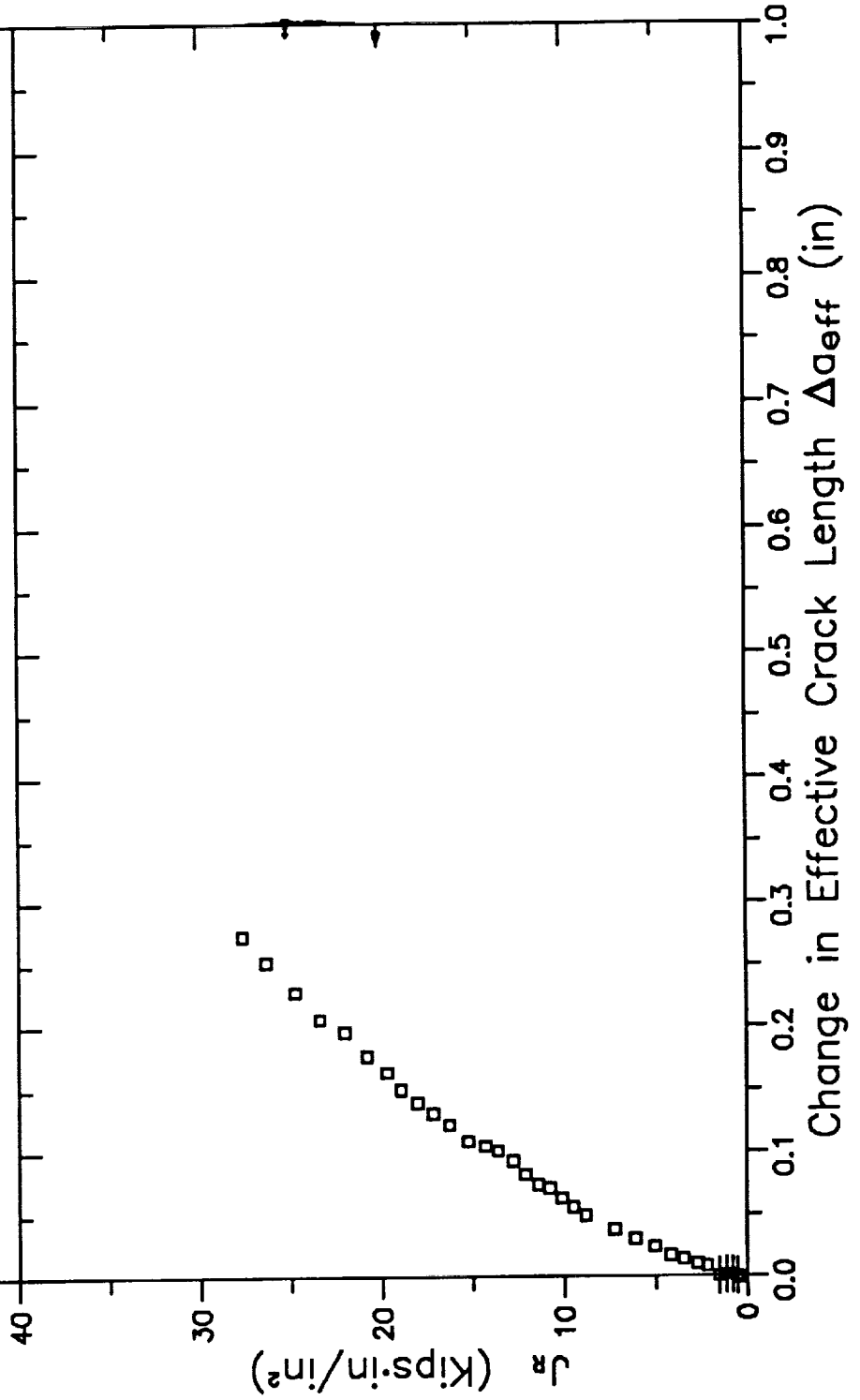


# RESISTANCE CURVE

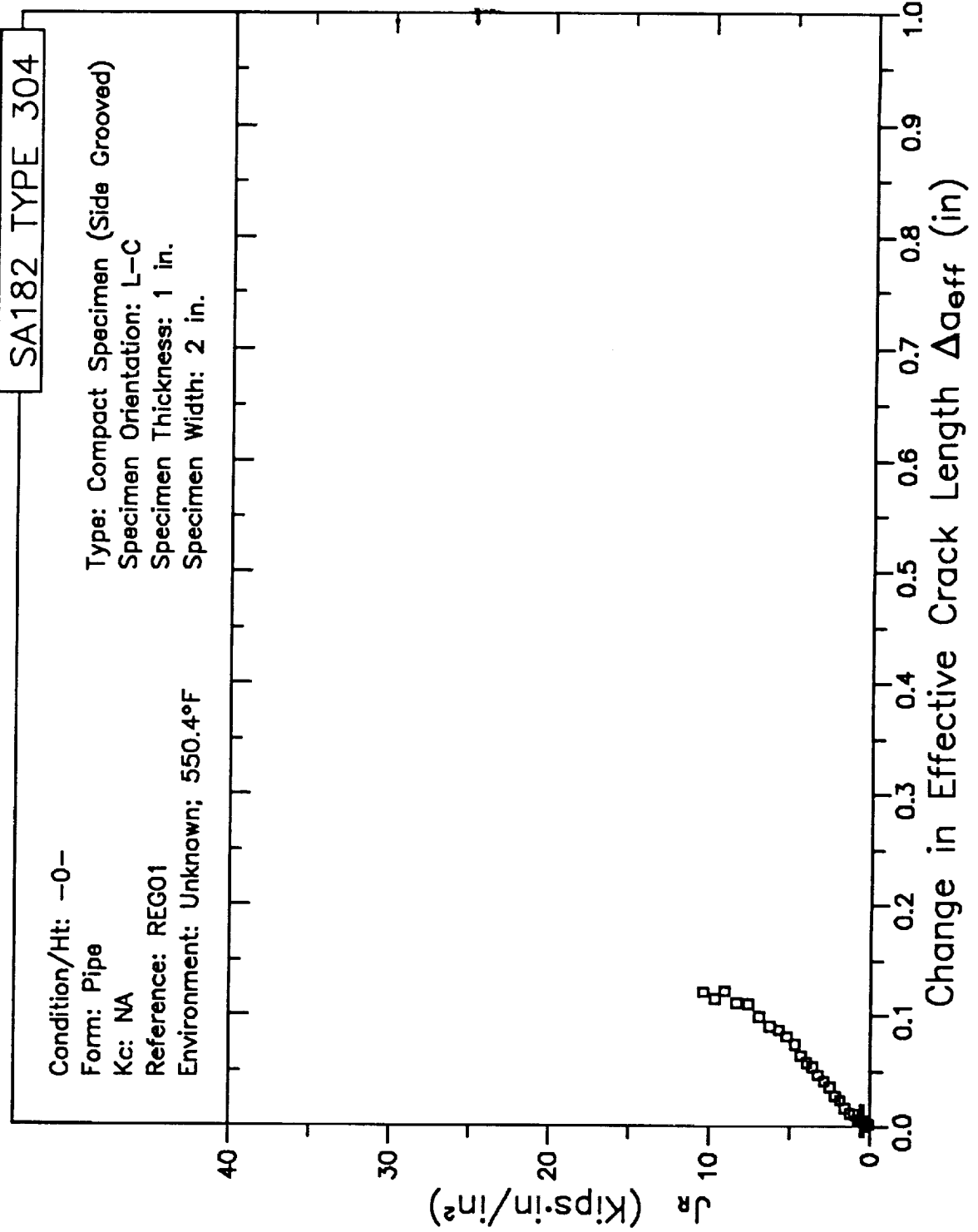
SA182 TYPE 304

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG01  
Environment: Unknown; 77°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: C-L  
Specimen Thickness: 1 in.  
Specimen Width: 2.008 in.



# RESISTANCE CURVE

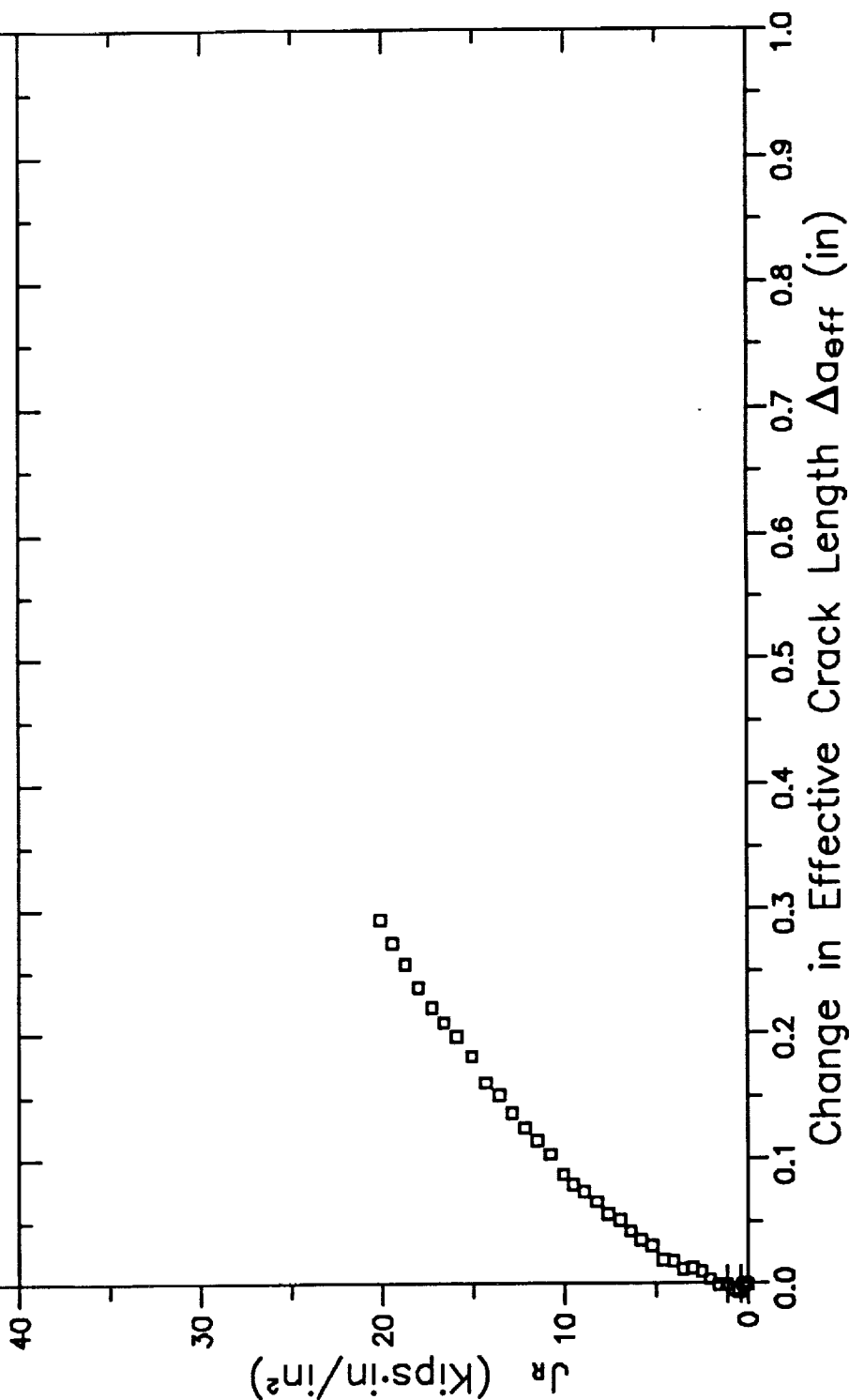


# RESISTANCE CURVE

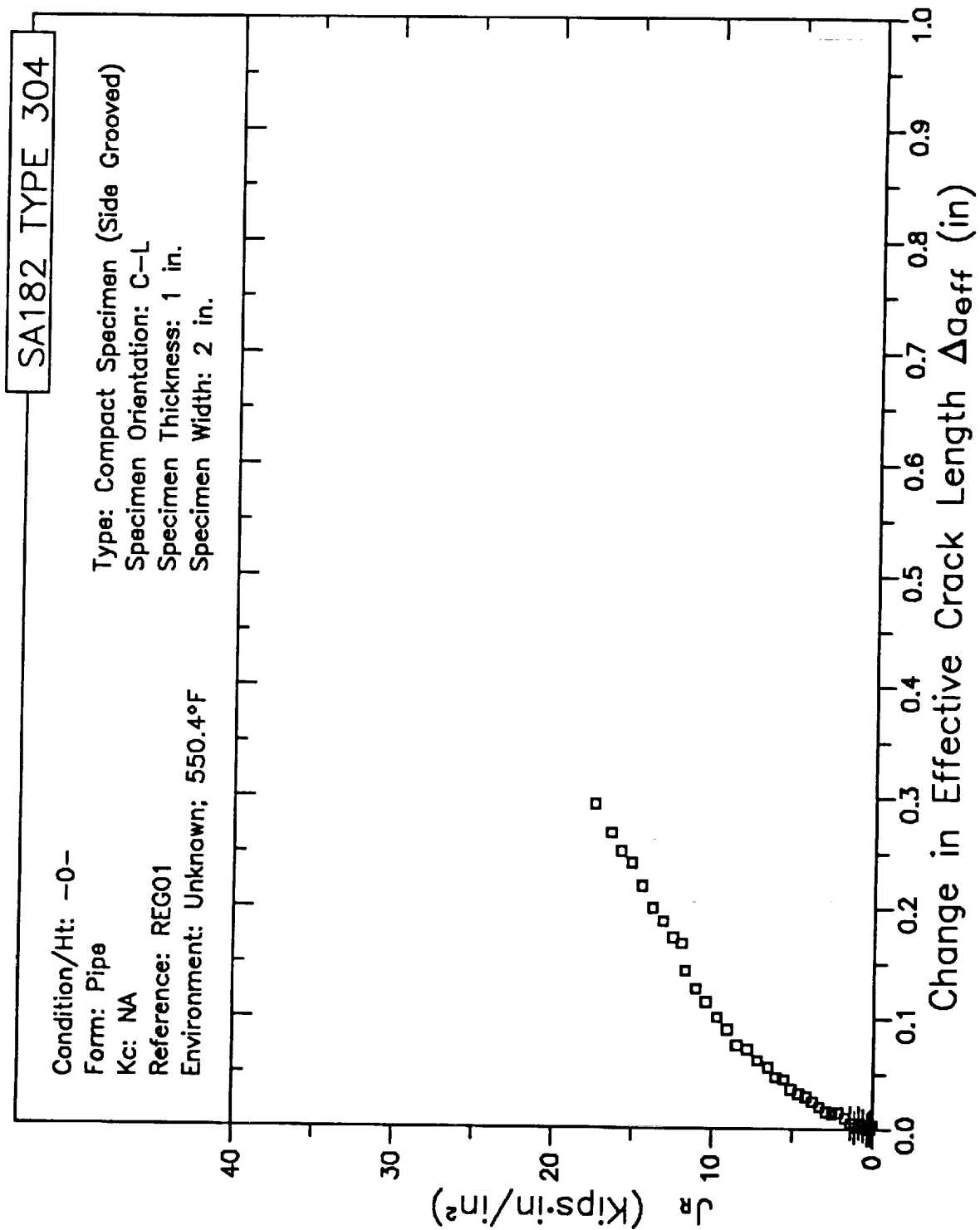
SA182 TYPE 304

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG01  
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 1 in.  
Specimen Width: 2 in.



# RESISTANCE CURVE

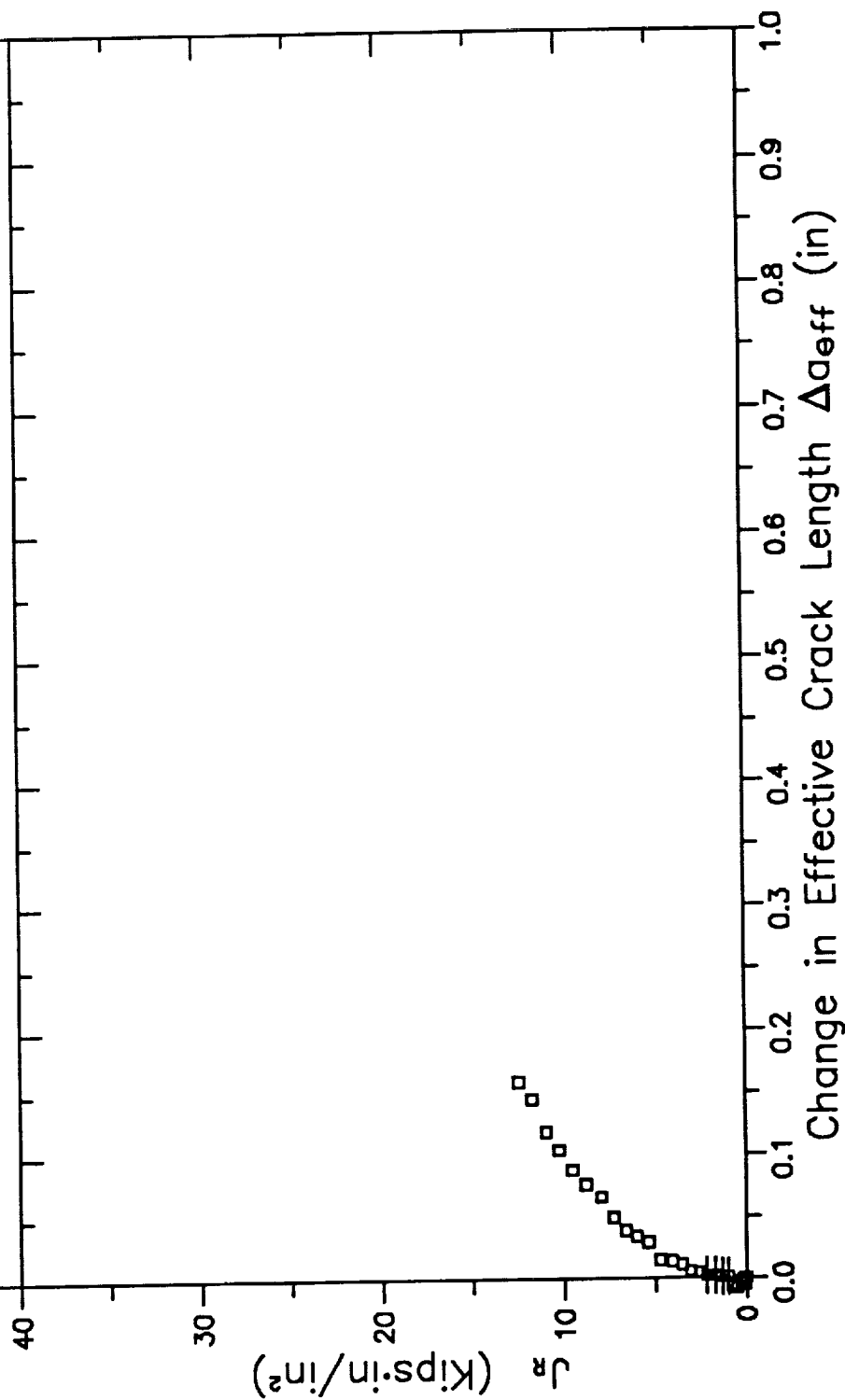


# RESISTANCE CURVE

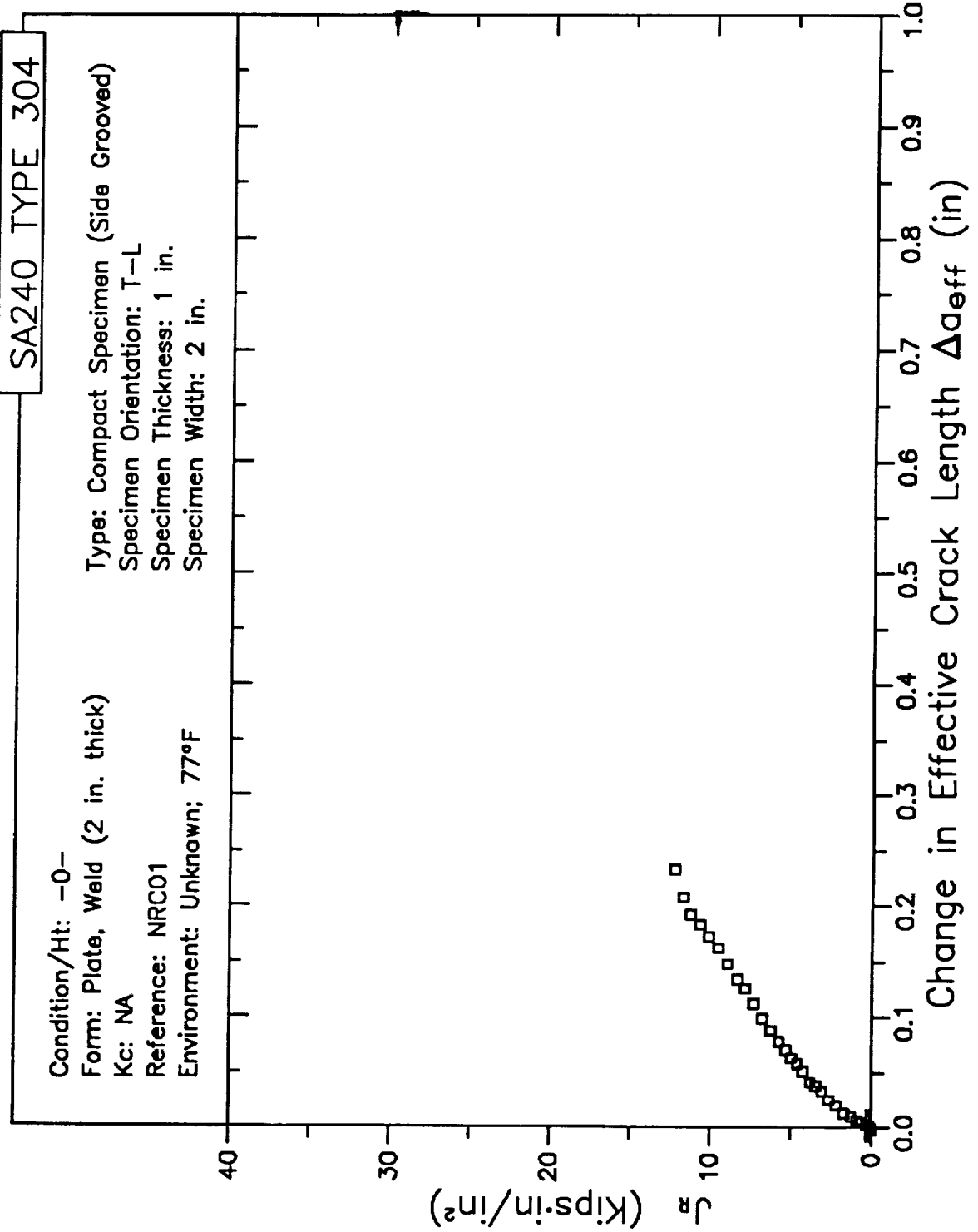
SA182 TYPE 304

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG01  
Environment: Unknown; 649.4°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: C-L  
Specimen Thickness: 1 in.  
Specimen Width: 2 in.



# RESISTANCE CURVE



# RESISTANCE CURVE

SA240 TYPE 304

Condition/Ht: -0-

Form: Plate, Weld (2 in. thick)

Kc: NA

Reference: NRC01

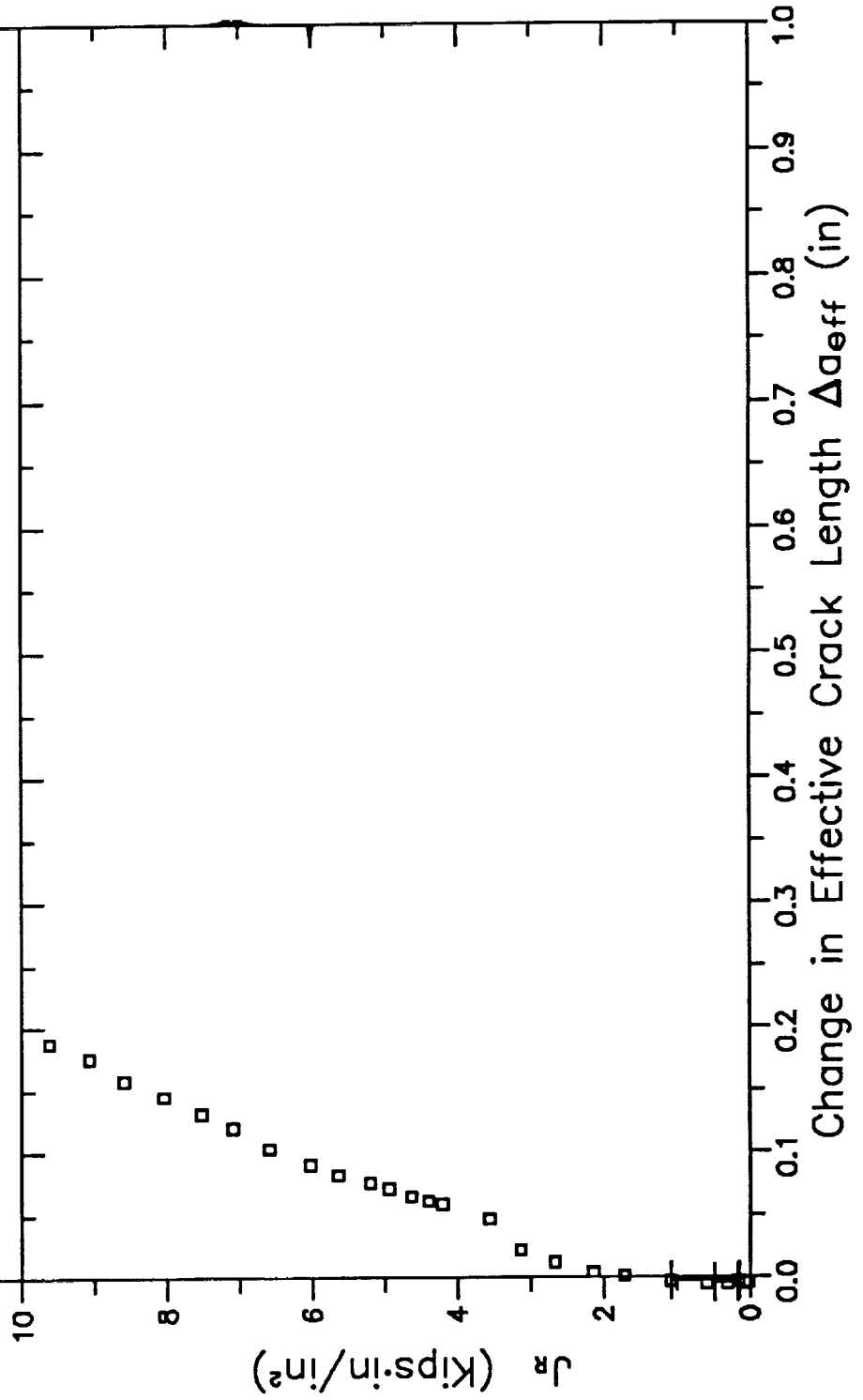
Environment: Unknown; 300.2°F

Type: Compact Specimen (Side Grooved)

Specimen Orientation: T-L

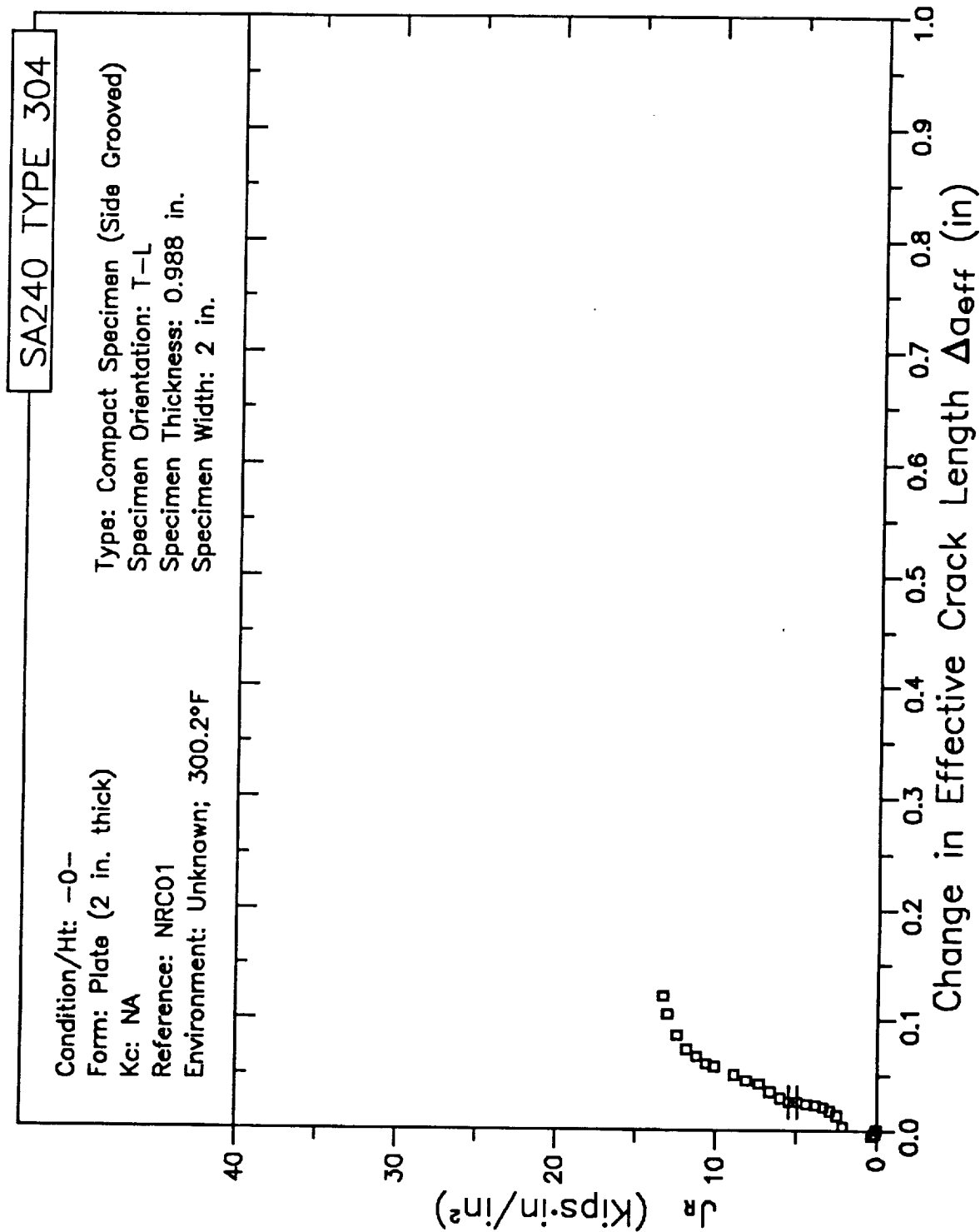
Specimen Thickness: 0.969 in.

Specimen Width: 2 in.





# RESISTANCE CURVE



# RESISTANCE CURVE

SA240 TYPE 304

Condition/Ht: -0-

Form: Plate (1 in. thick)

Kc: NA

Reference: REG03

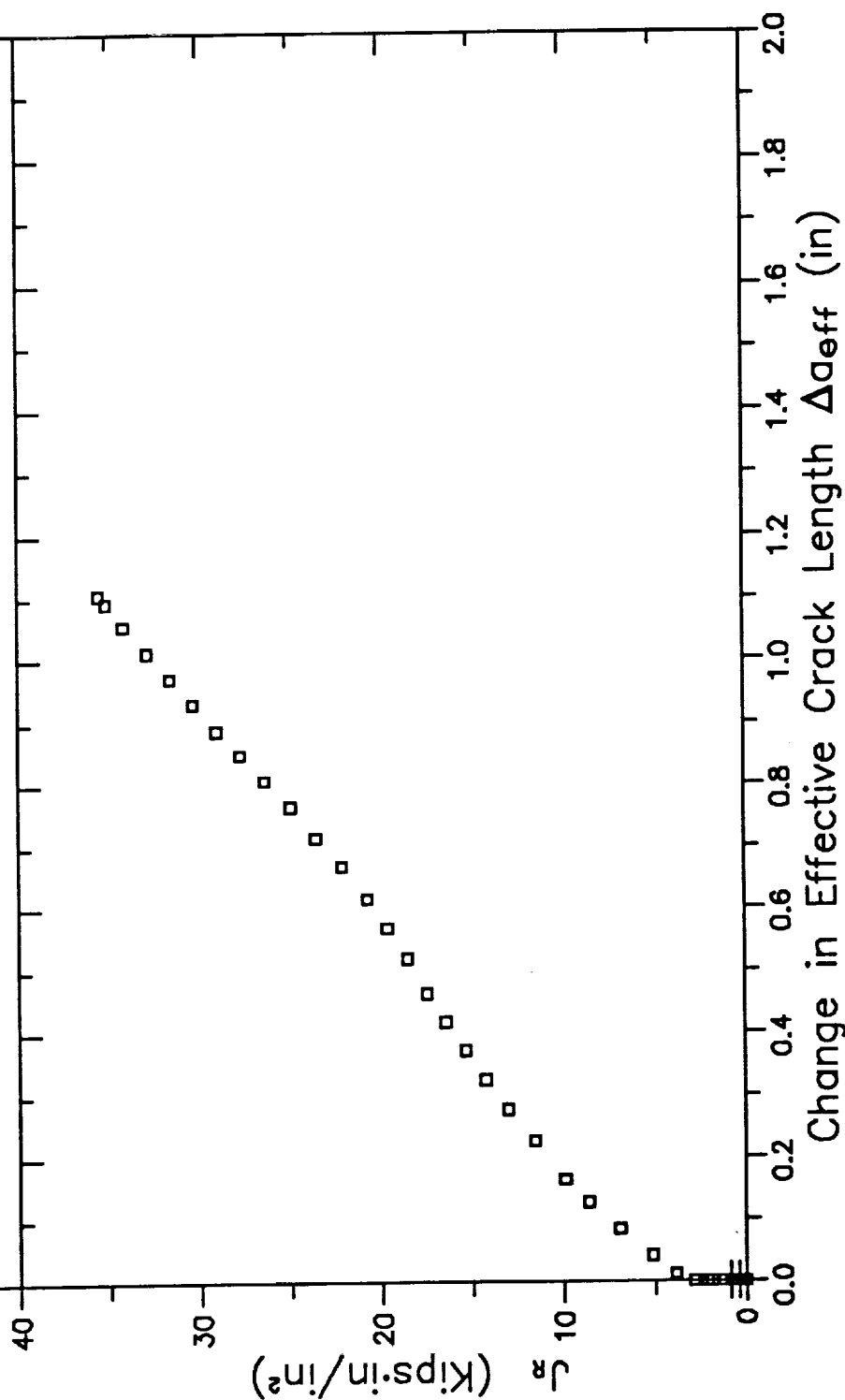
Environment: Unknown; 300.2°F

Type: Compact Specimen (Side Grooved)

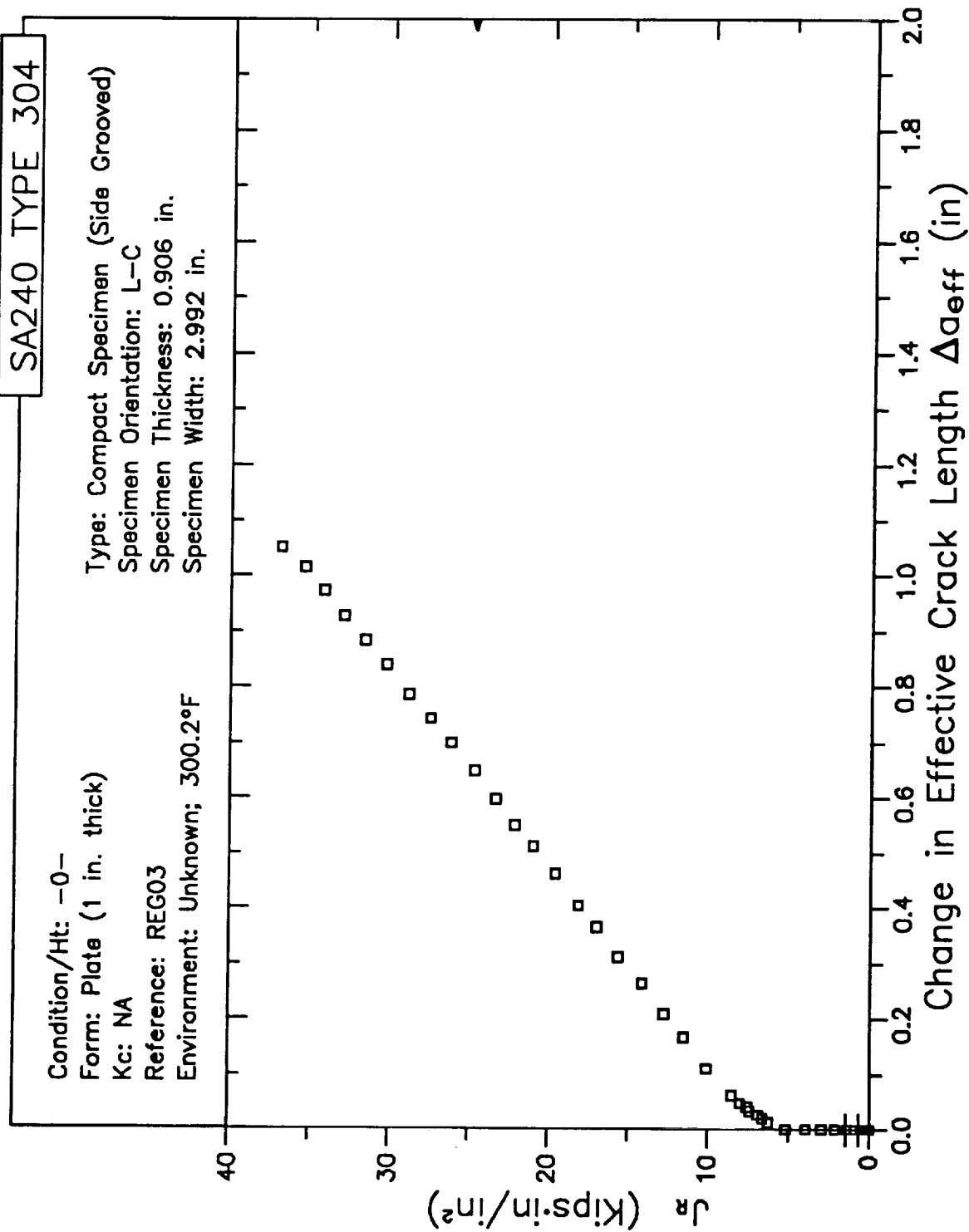
Specimen Orientation: L-C

Specimen Thickness: 0.906 in.

Specimen Width: 2.992 in.



# RESISTANCE CURVE



# RESISTANCE CURVE

SA240 TYPE 304

Condition/Ht: -0-

Form: Plate (1 in. thick)

Kc: NA

Reference: REG03

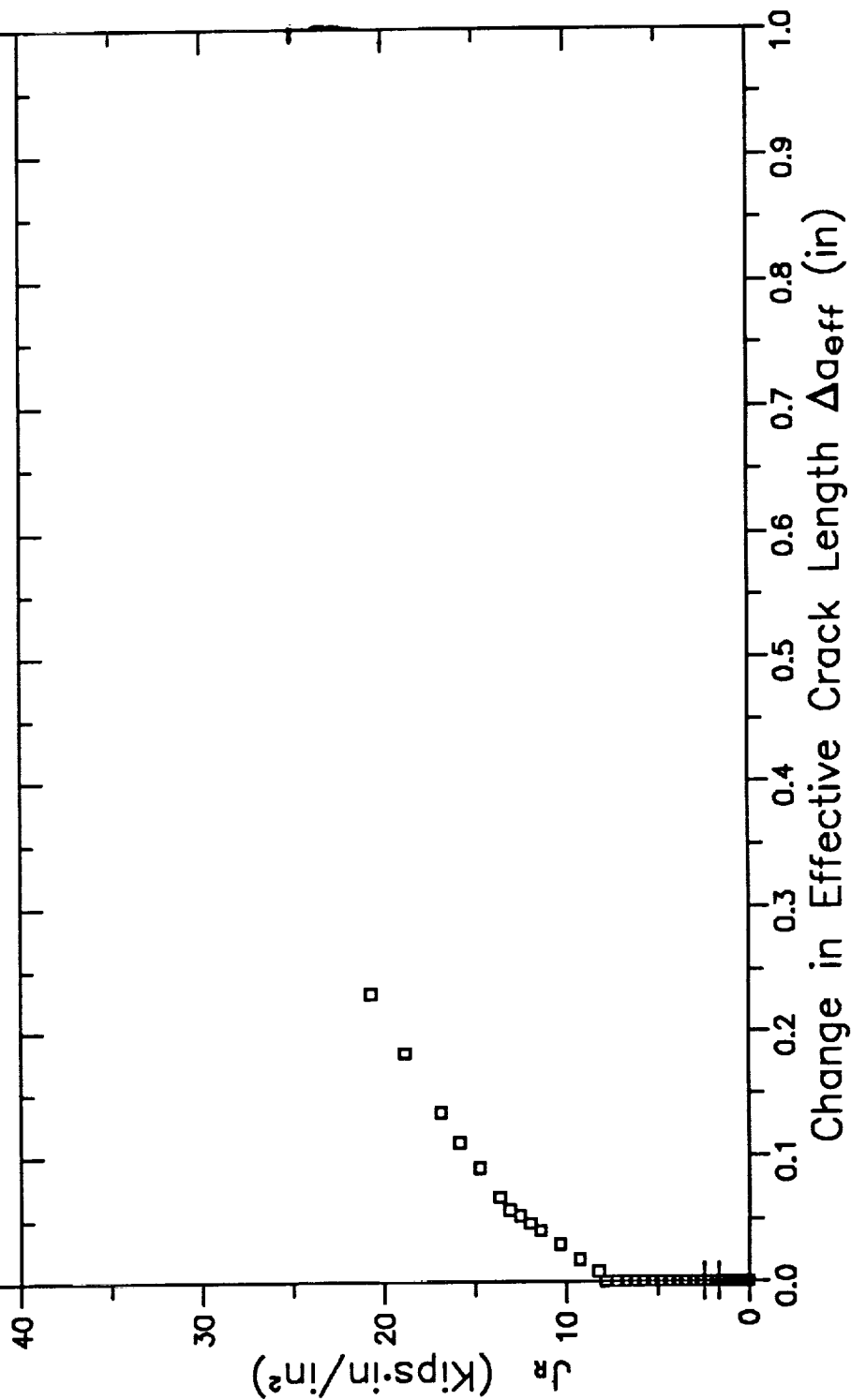
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)

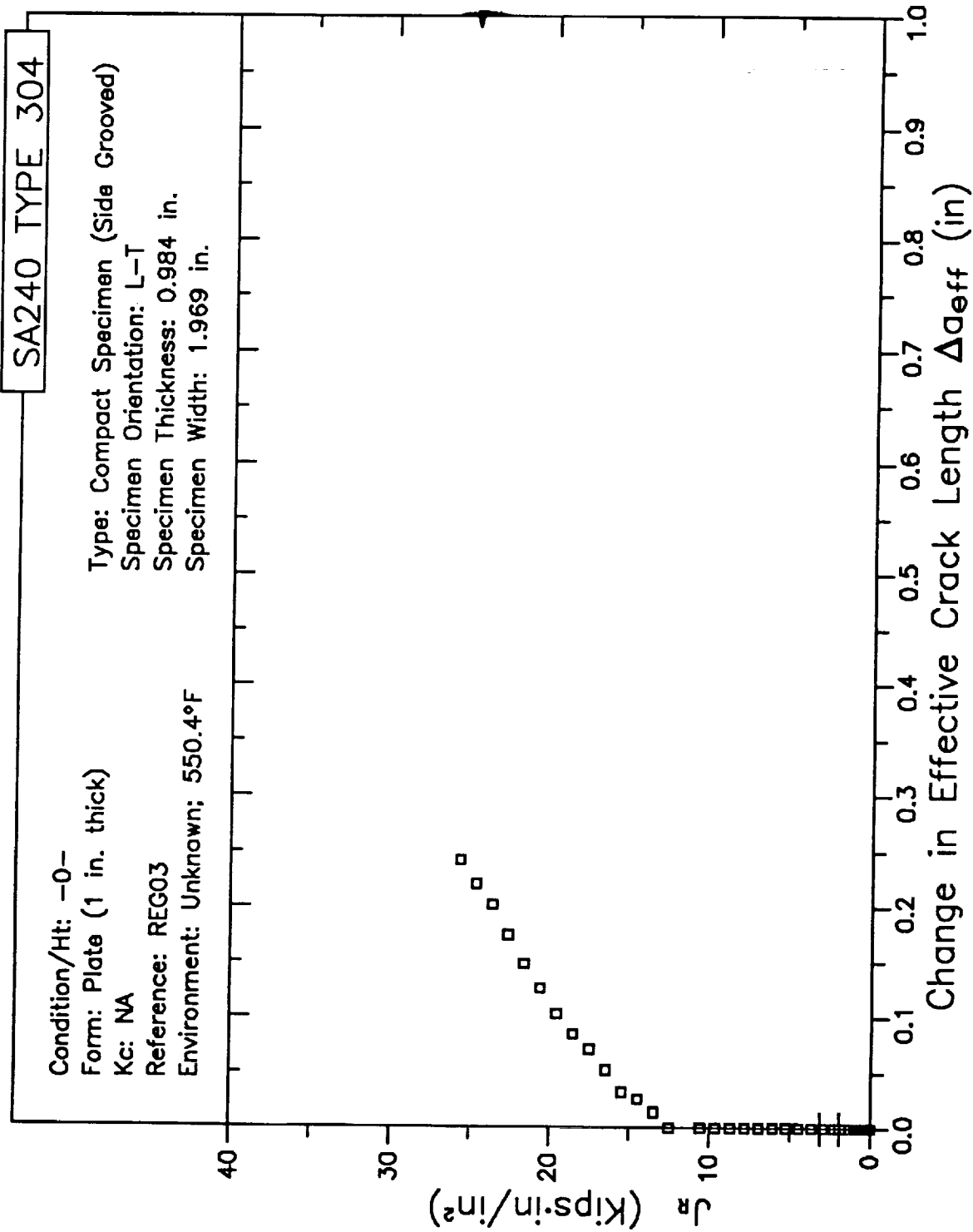
Specimen Orientation: L-T

Specimen Thickness: 0.984 in.

Specimen Width: 1.969 in.



# RESISTANCE CURVE



# RESISTANCE CURVE

SA240 TYPE 304

Condition/Ht: -0-

Form: Plate (1 in. thick)

Kc: NA

Reference: REG03

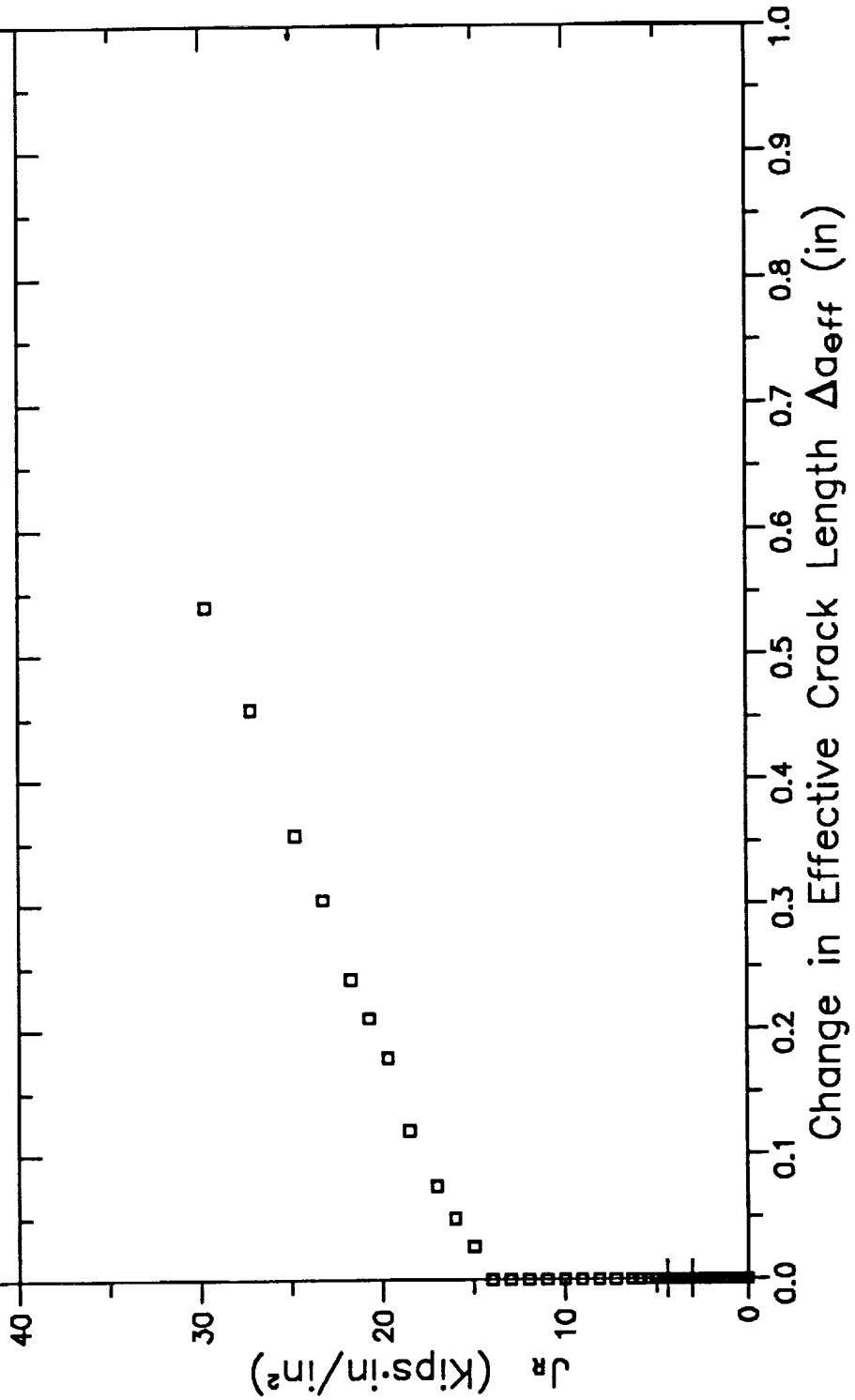
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)

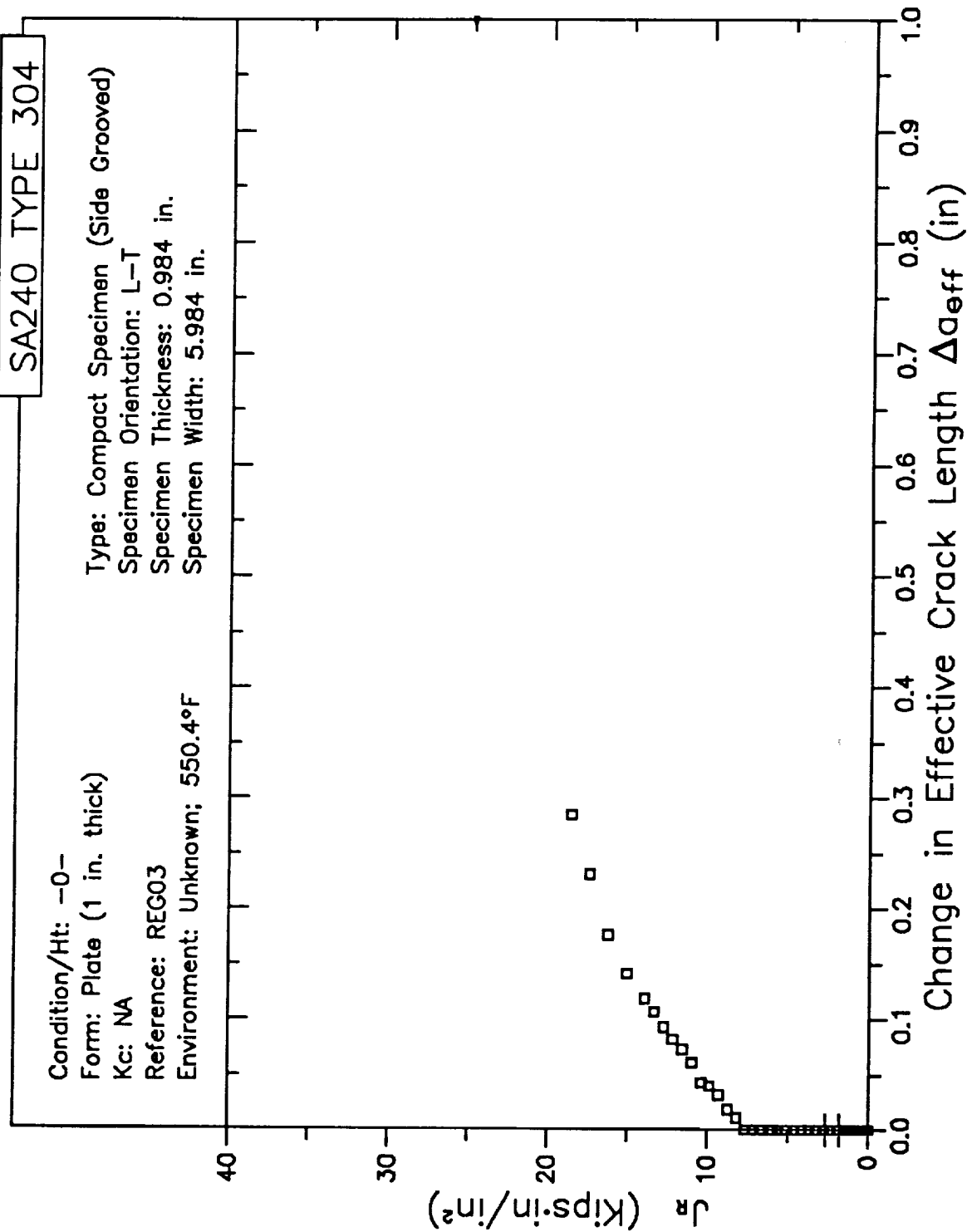
Specimen Orientation: L-T

Specimen Thickness: 0.984 in.

Specimen Width: 5.984 in.



# RESISTANCE CURVE



# RESISTANCE CURVE

SA240 TYPE 304

Condition/Ht: -0-

Form: Plate (1 in. thick)

Kc: NA

Reference: REG03

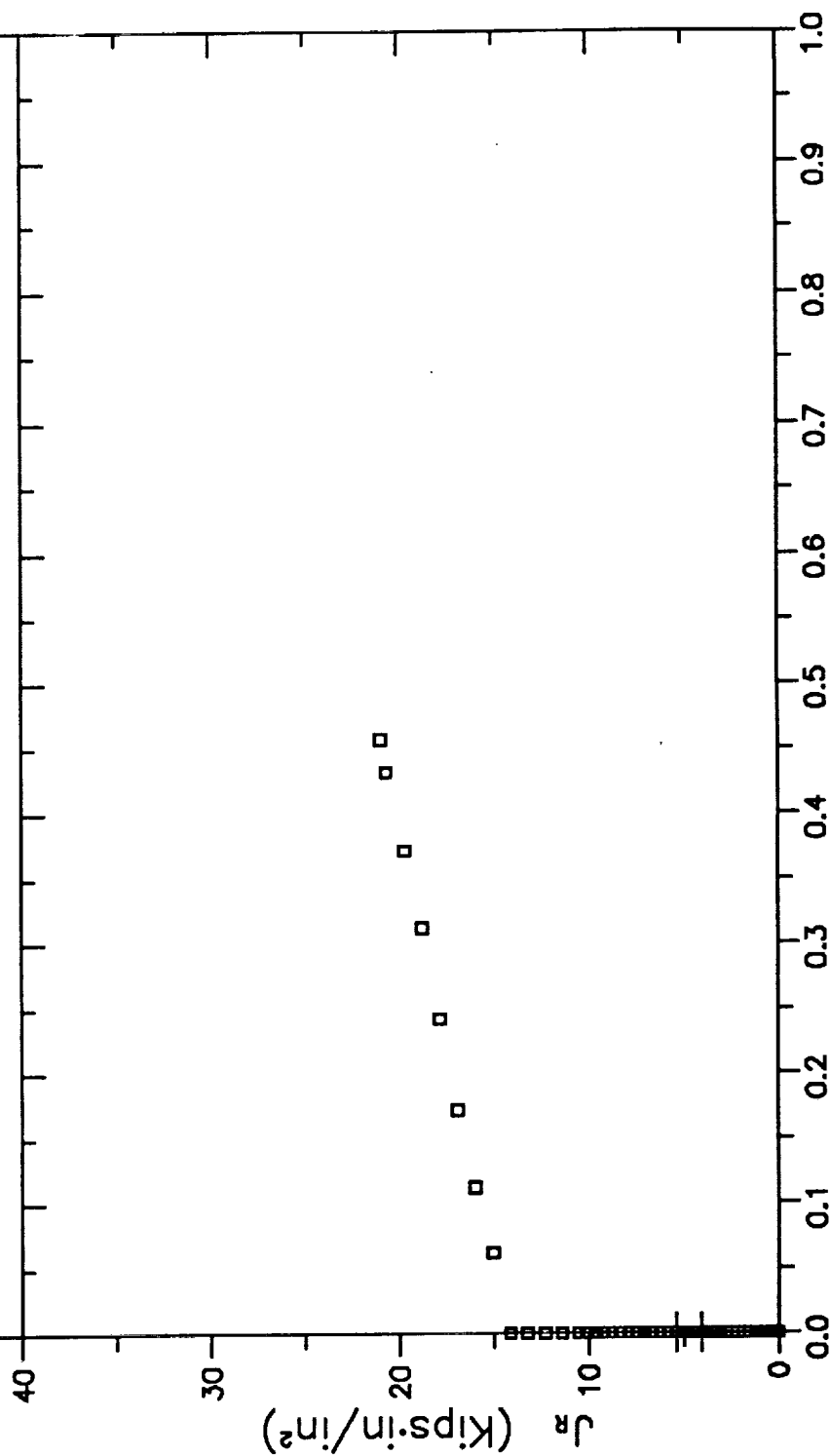
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)

Specimen Orientation: L-T

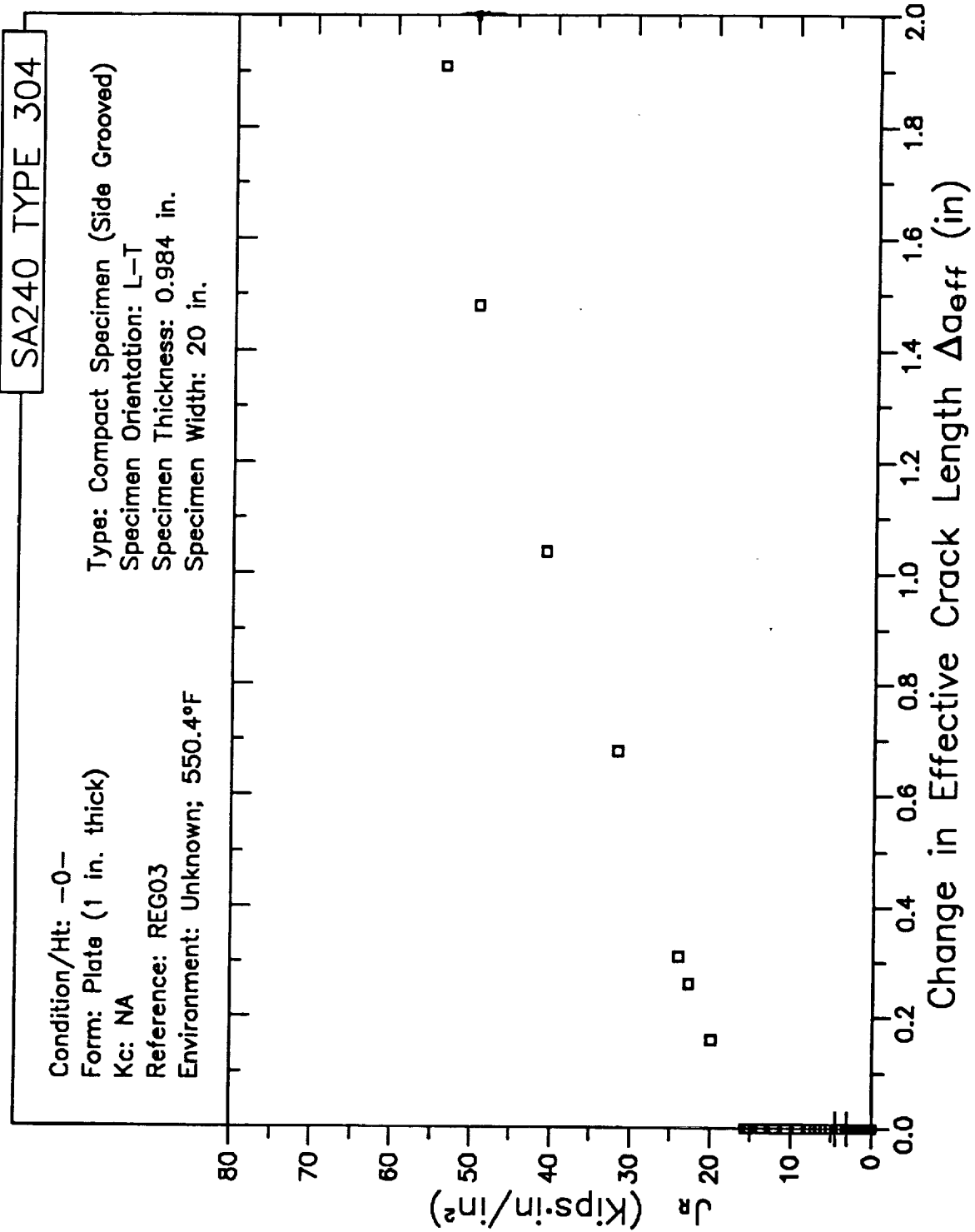
Specimen Thickness: 0.984 in.

Specimen Width: 20 in.





# RESISTANCE CURVE



# RESISTANCE CURVE

SA240 TYPE 304

Condition/Ht: -0-

Form: Plate, Weld (2 in. thick)

Kc: NA

Reference: NRC01

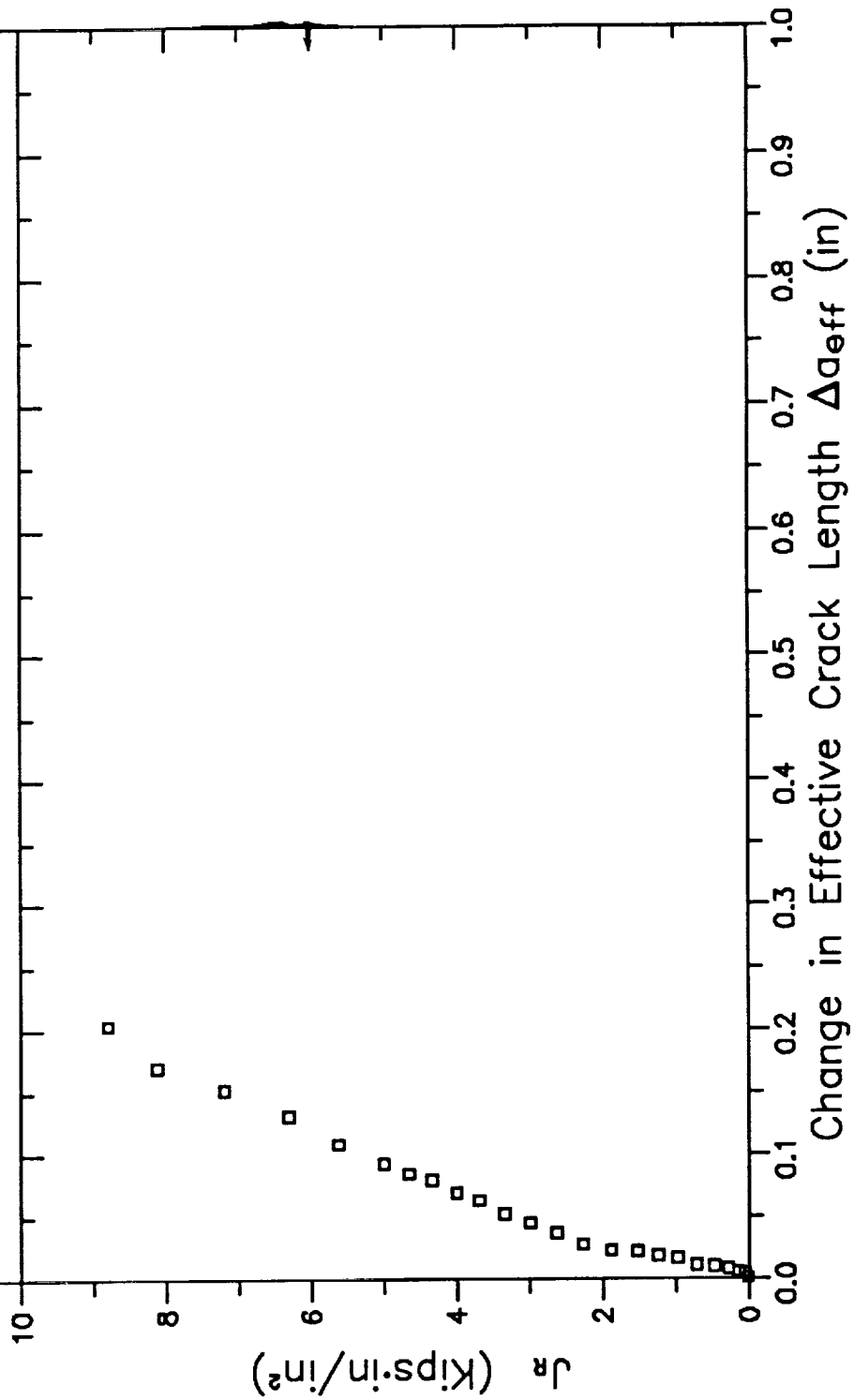
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)

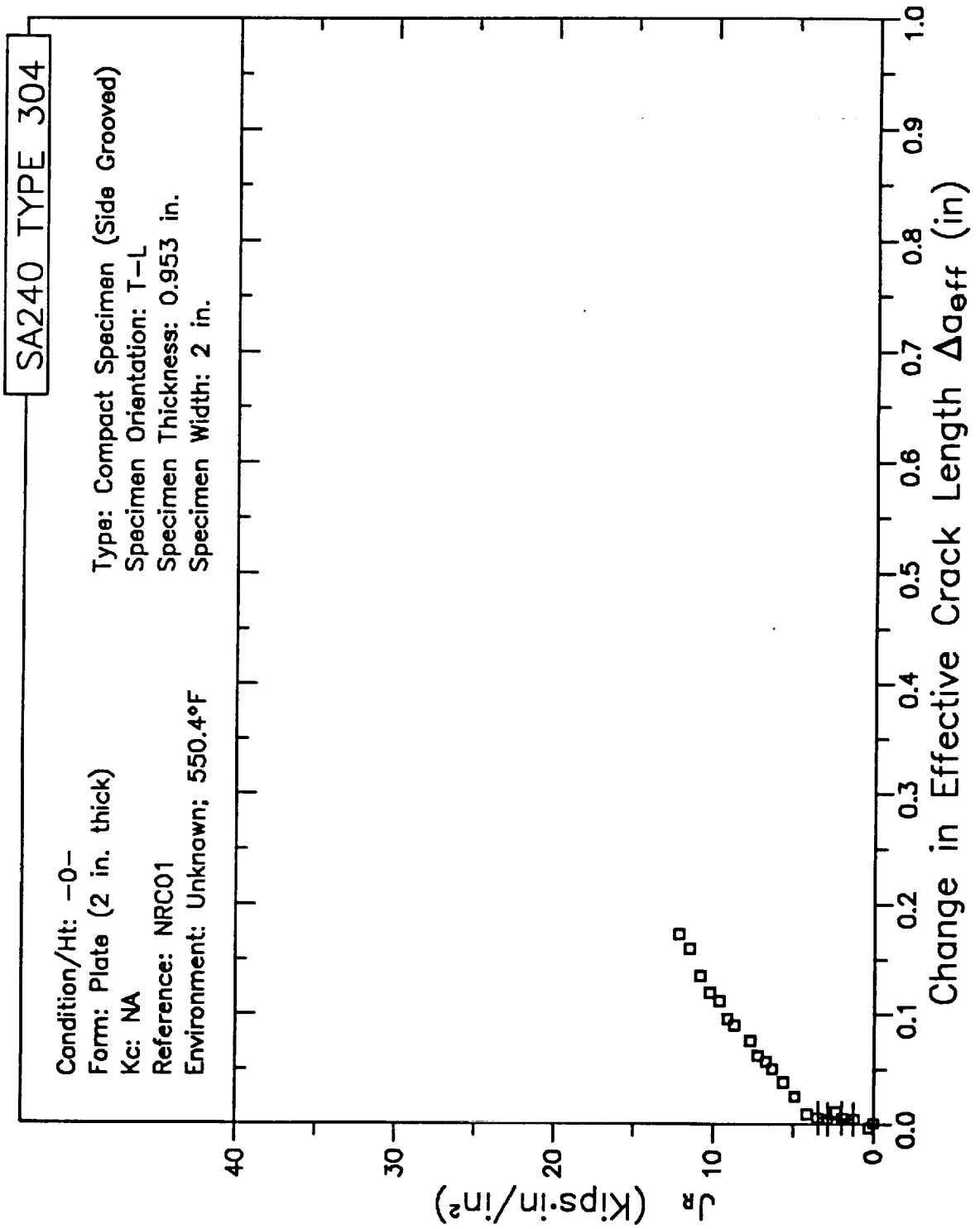
Specimen Orientation: T-L

Specimen Thickness: 0.898 in.

Specimen Width: 1.996 in.



# RESISTANCE CURVE



# RESISTANCE CURVE

SA240 TYPE 304

Condition/Ht: -0-

Form: Plate (2 in. thick)

Kc: NA

Reference: NRC01

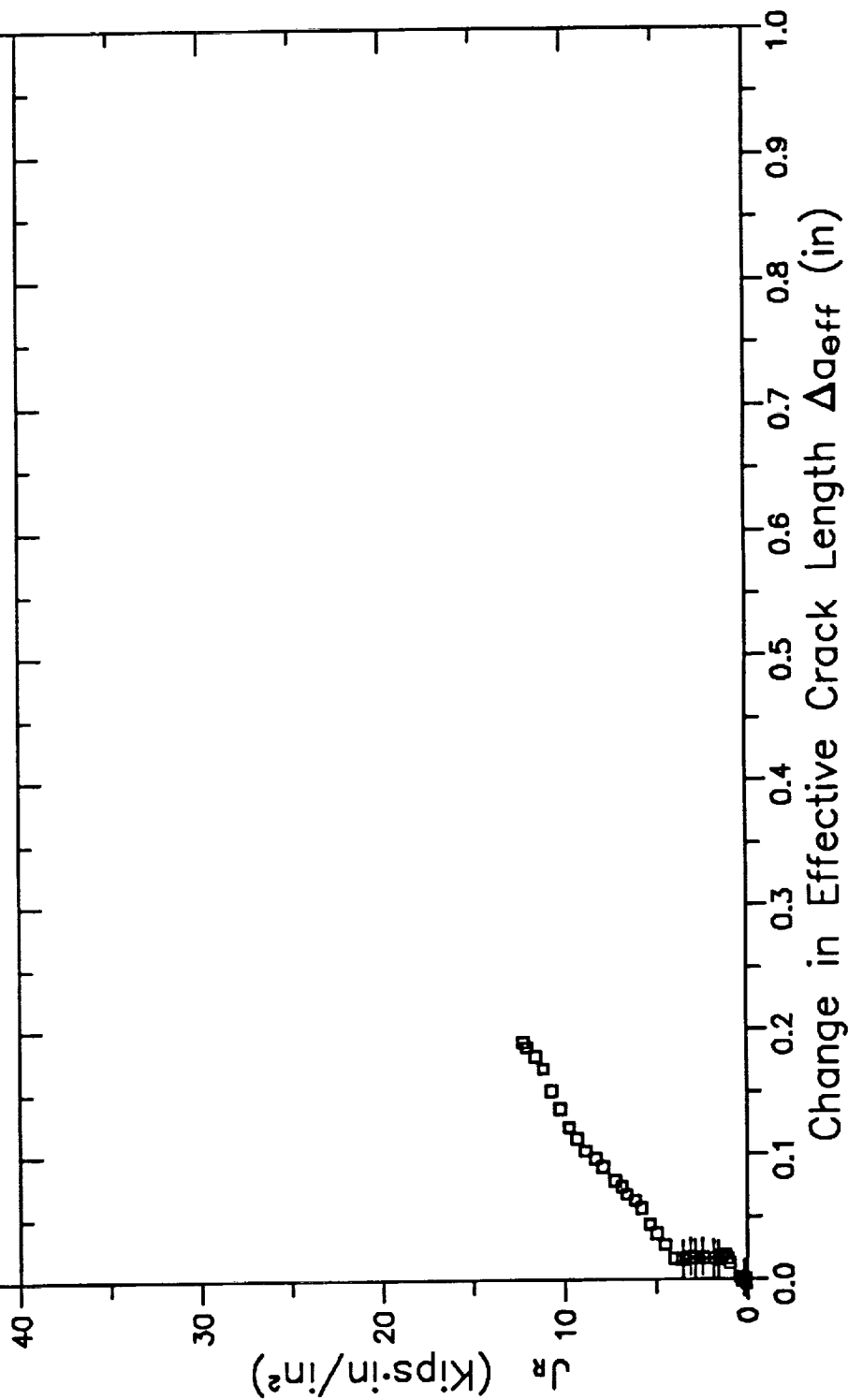
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)

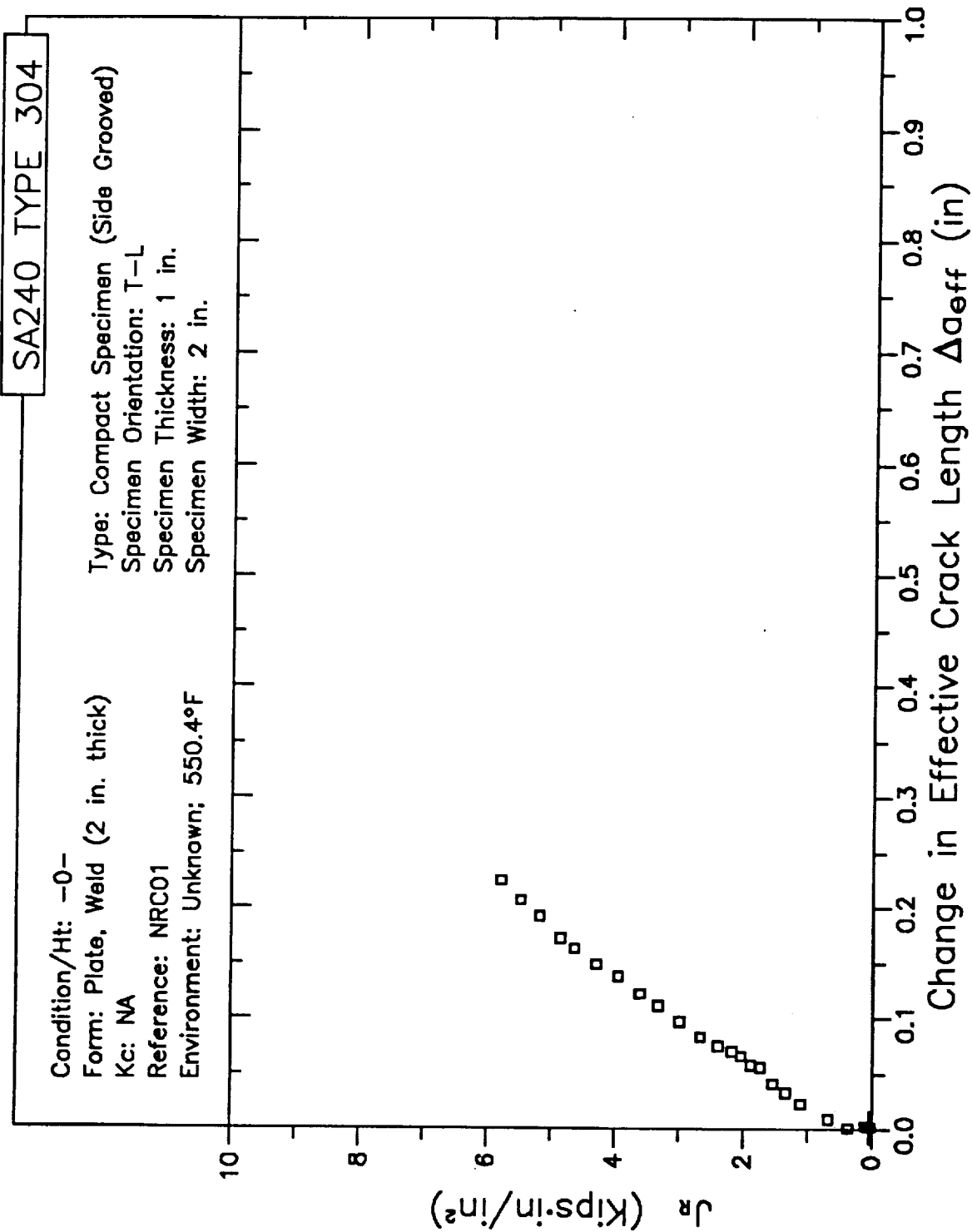
Specimen Orientation: T-L

Specimen Thickness: 0.996 in.

Specimen Width: 2 in.



# RESISTANCE CURVE



# RESISTANCE CURVE

SA240 TYPE 304

Condition/Ht: -0-

Form: Plate, HAZ (2 in. thick)

Kc: NA

Reference: NRC01

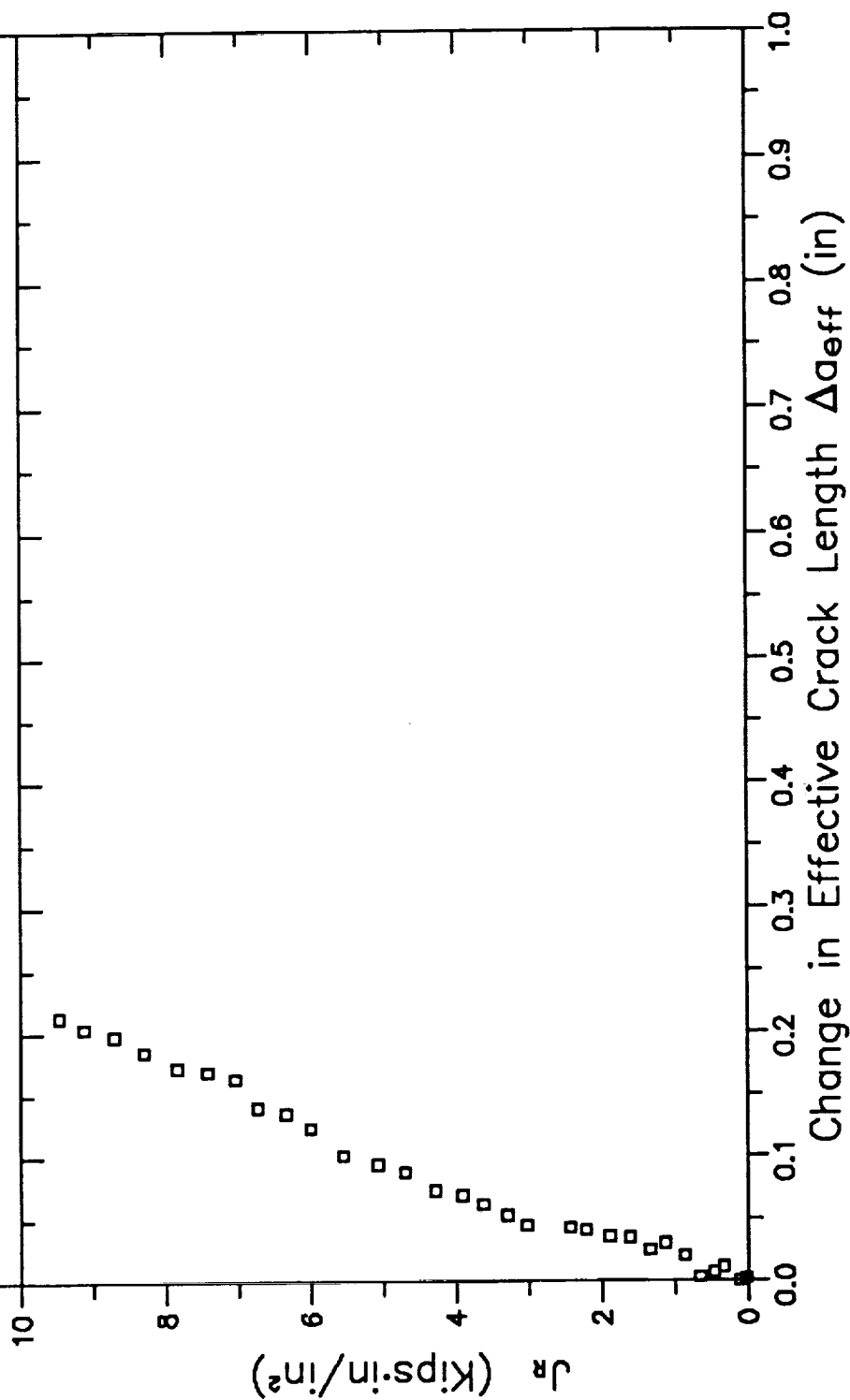
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)

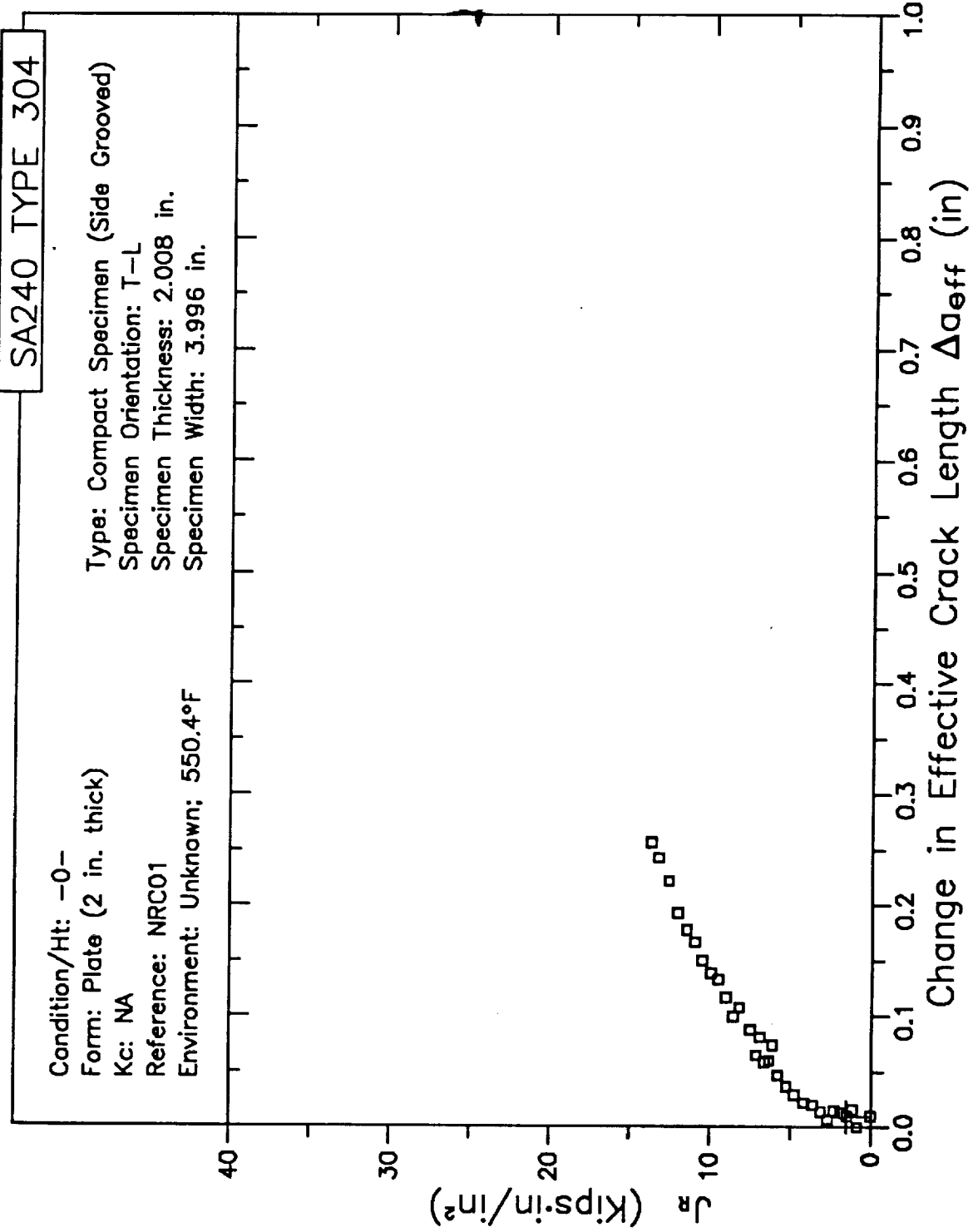
Specimen Orientation: T-L

Specimen Thickness: 1.004 in.

Specimen Width: 2 in.



# RESISTANCE CURVE

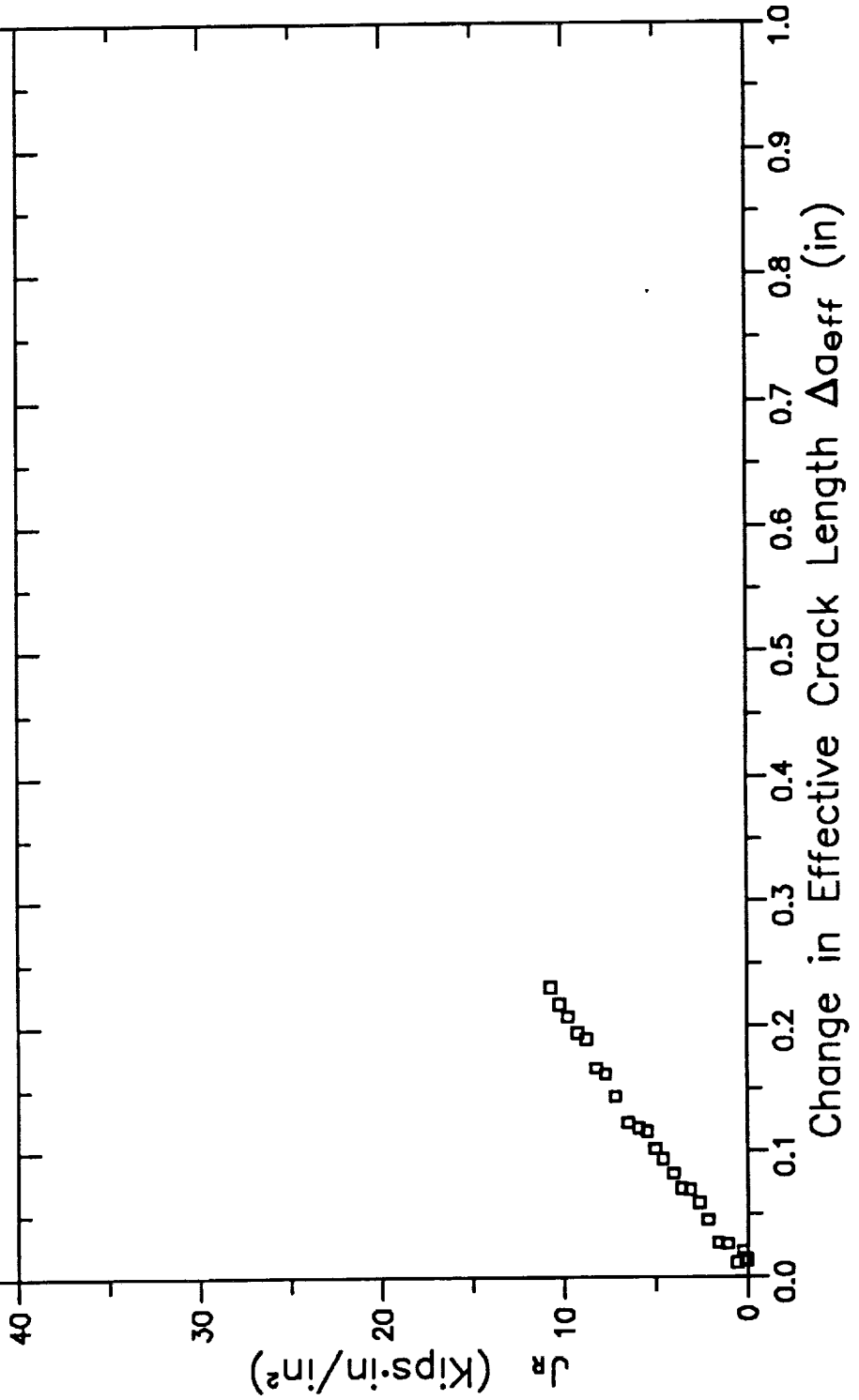


# RESISTANCE CURVE

SA240 TYPE 304

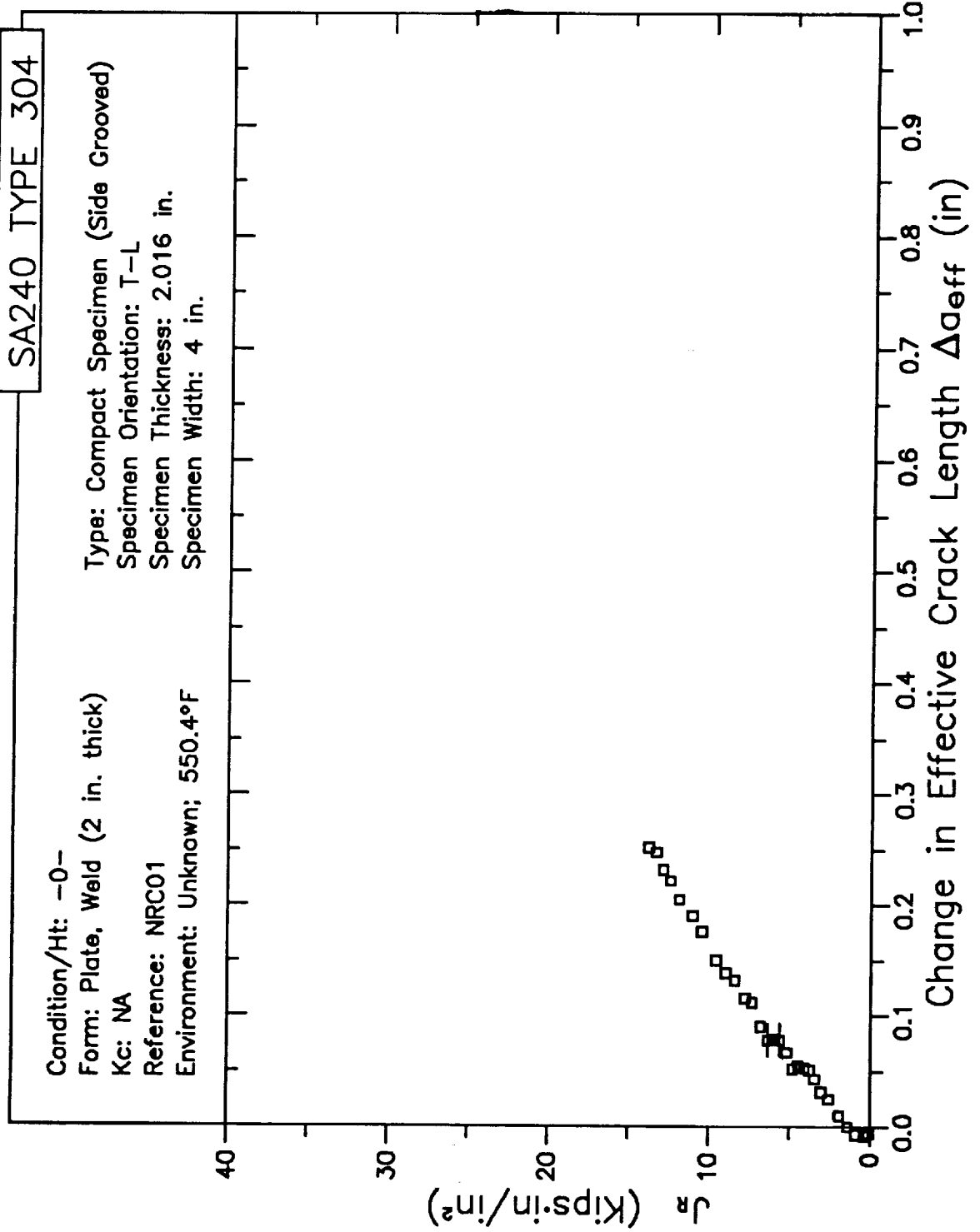
Condition/Ht: -0-  
Form: Plate, Weld (2 in. thick)  
Kc: NA  
Reference: NRC01  
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: T-L  
Specimen Thickness: 2.008 in.  
Specimen Width: 4 in.





# RESISTANCE CURVE



# RESISTANCE CURVE

SA240 TYPE 304

Condition/Ht: -0-

Form: Plate (1 in. thick)

Kc: NA

Reference: REG03

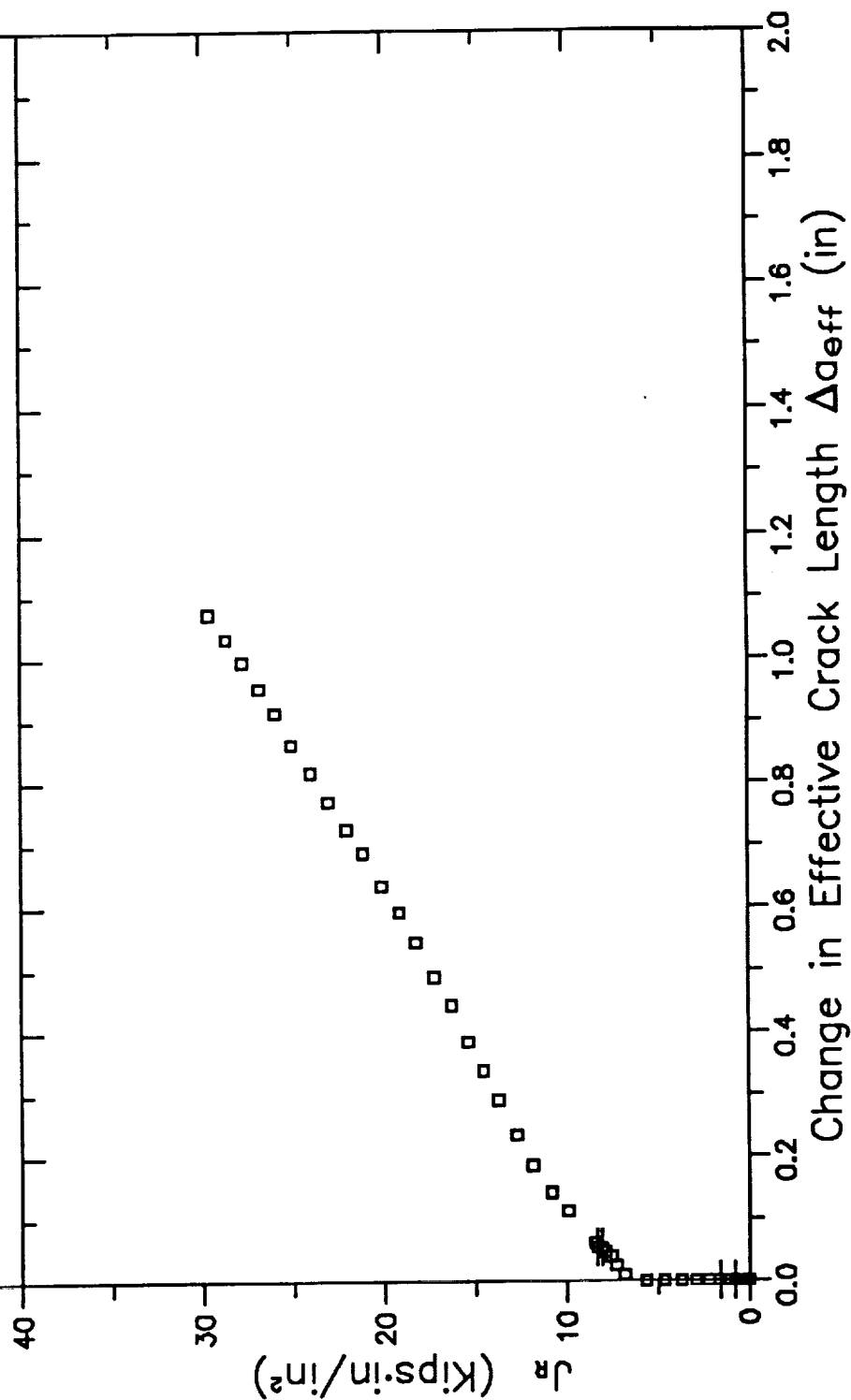
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)

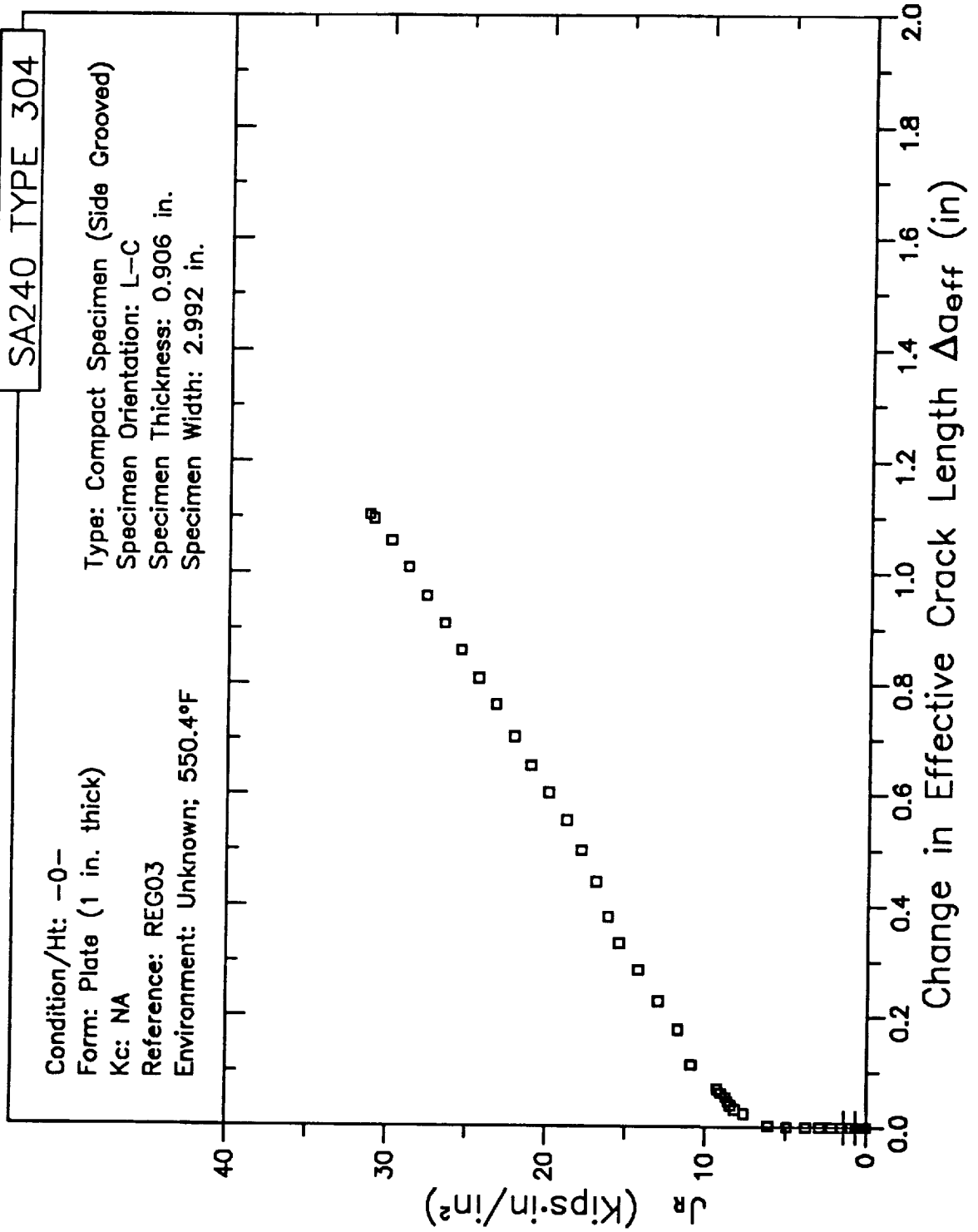
Specimen Orientation: L-C

Specimen Thickness: 0.866 in.

Specimen Width: 2.992 in.



# RESISTANCE CURVE

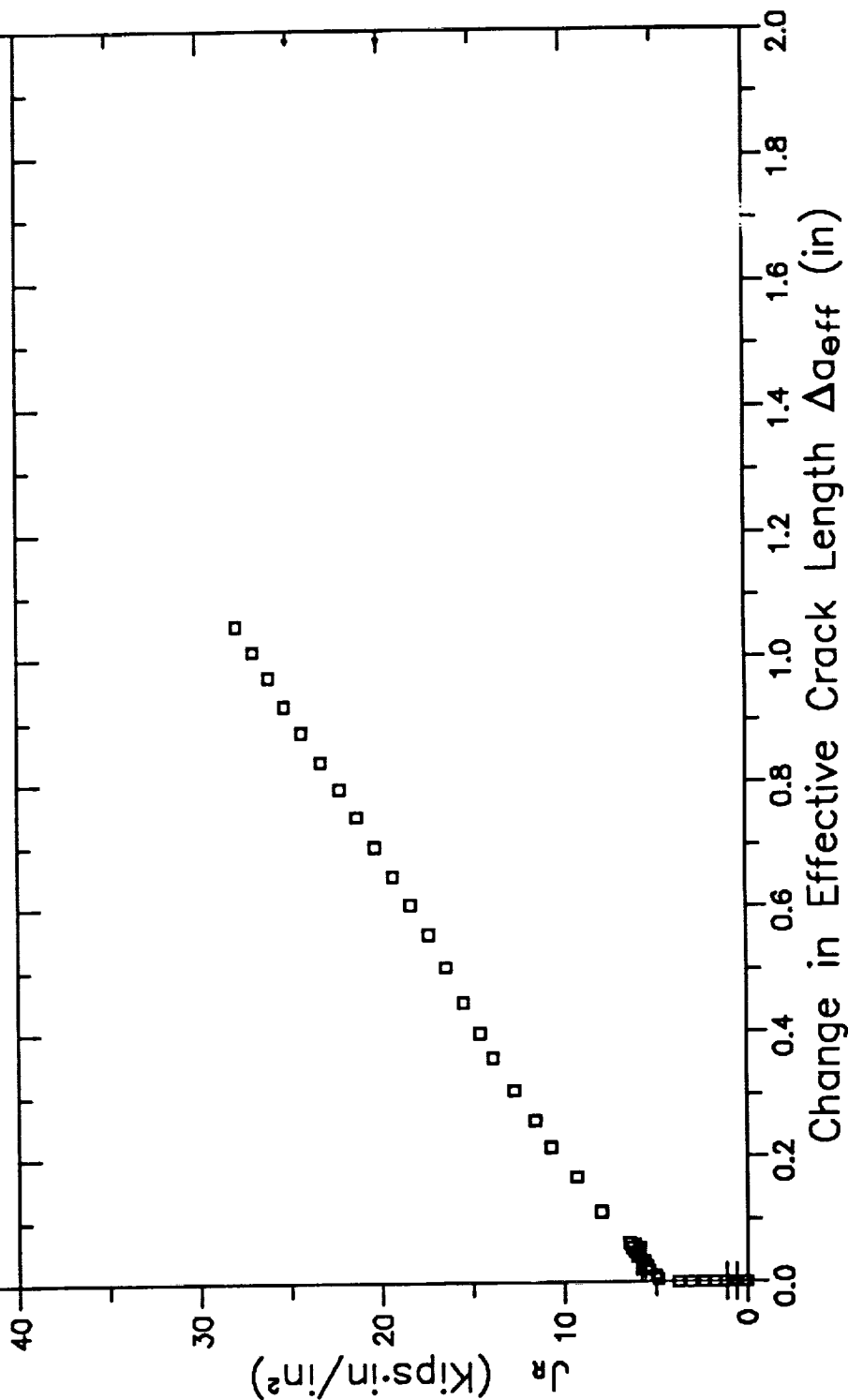


# RESISTANCE CURVE

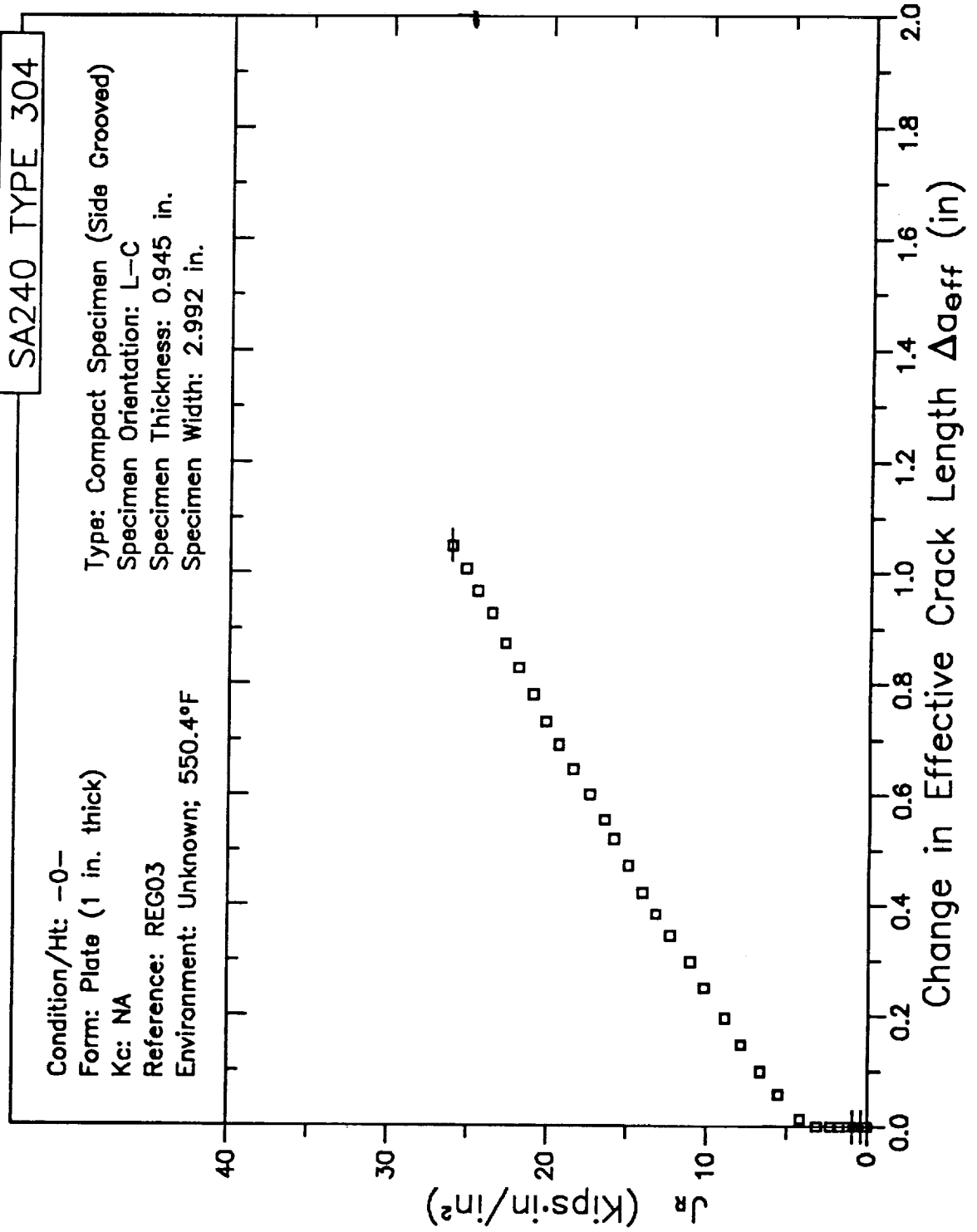
SA240 TYPE 304

Condition/Ht: -0-  
Form: Plate (1 in. thick)  
Kc: NA  
Reference: REG03  
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 0.945 in.  
Specimen Width: 2.992 in.



# RESISTANCE CURVE



# RESISTANCE CURVE

SA240 TYPE 304

Condition/Ht: -0-

Form: Plate, Weld (1 in. thick)

Kc: NA

Reference: REG03

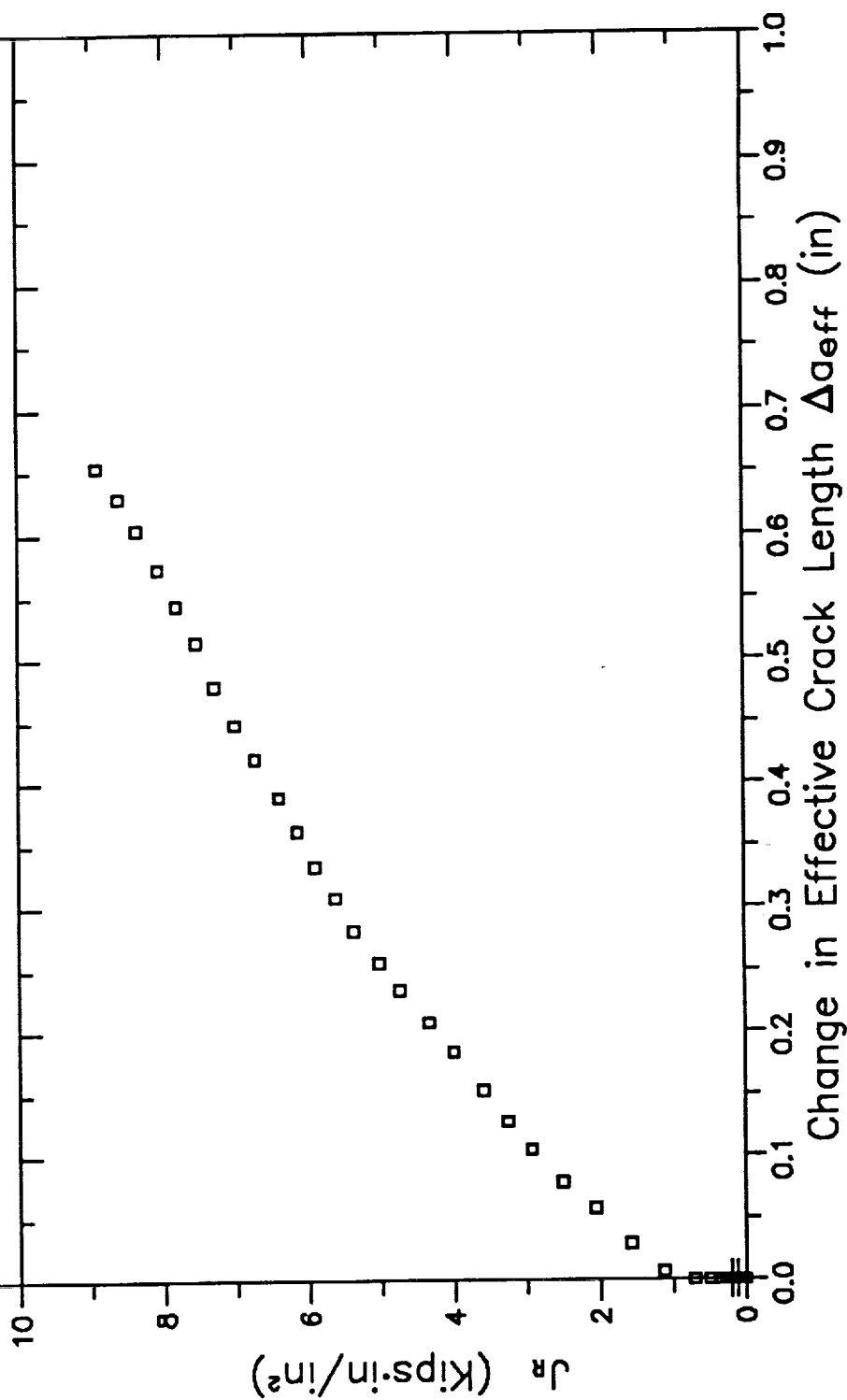
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)

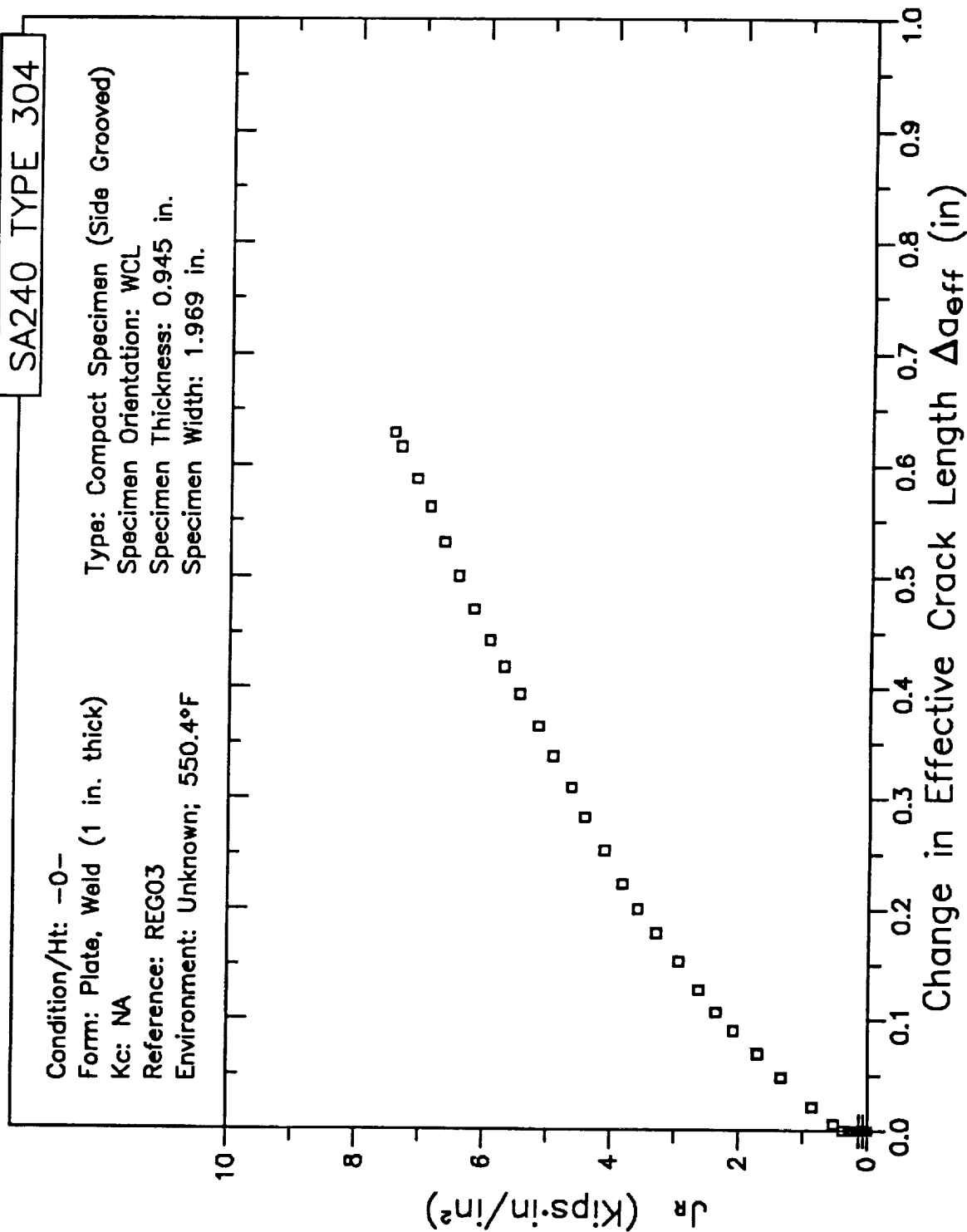
Specimen Orientation: WCL

Specimen Thickness: 0.827 in.

Specimen Width: 1.969 in.



# RESISTANCE CURVE



# RESISTANCE CURVE

SA240 TYPE 304

Condition/Ht: -0-

Form: Plate, Weld (1 in. thick)

Kc: NA

Reference: REG03

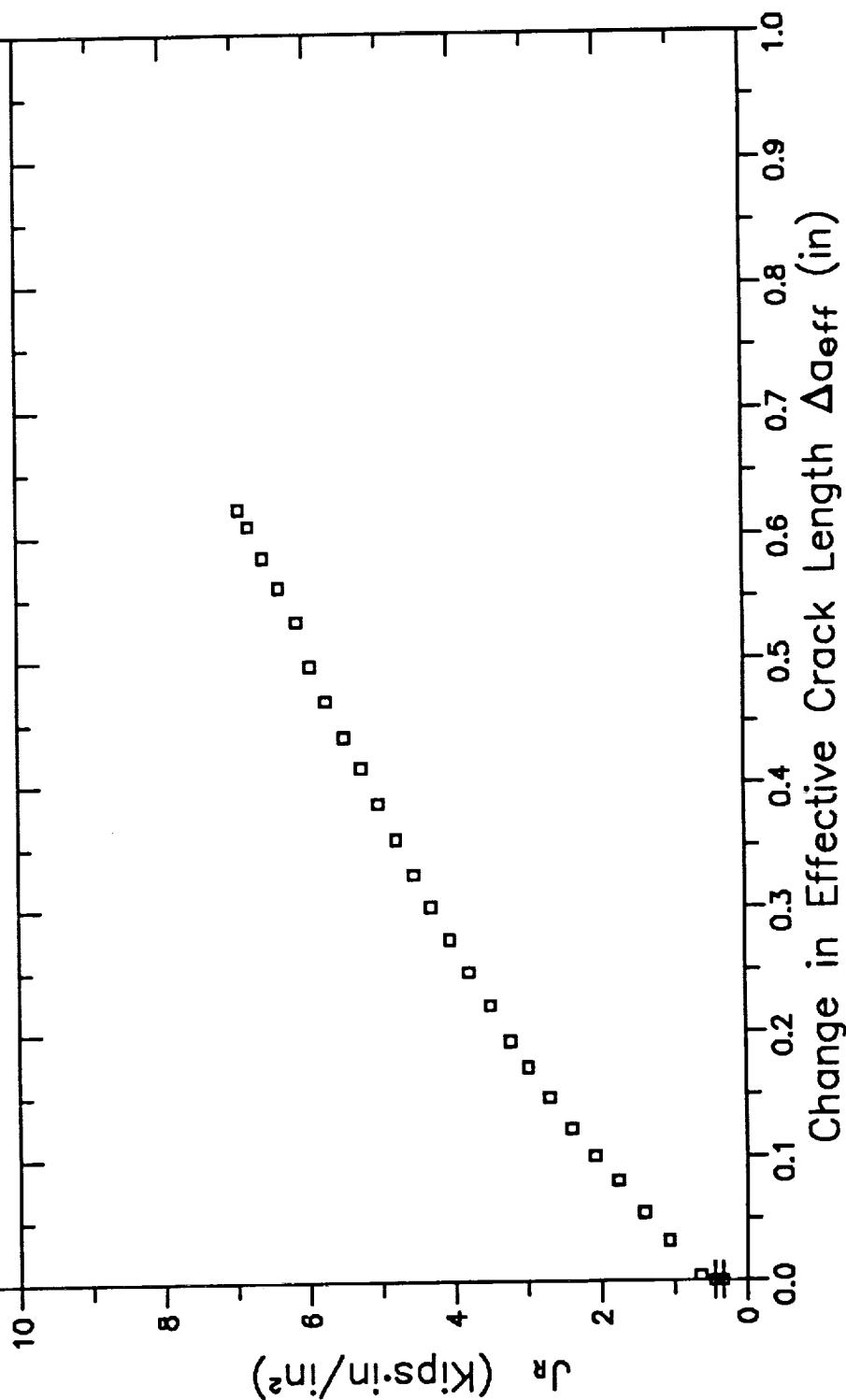
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)

Specimen Orientation: WCL

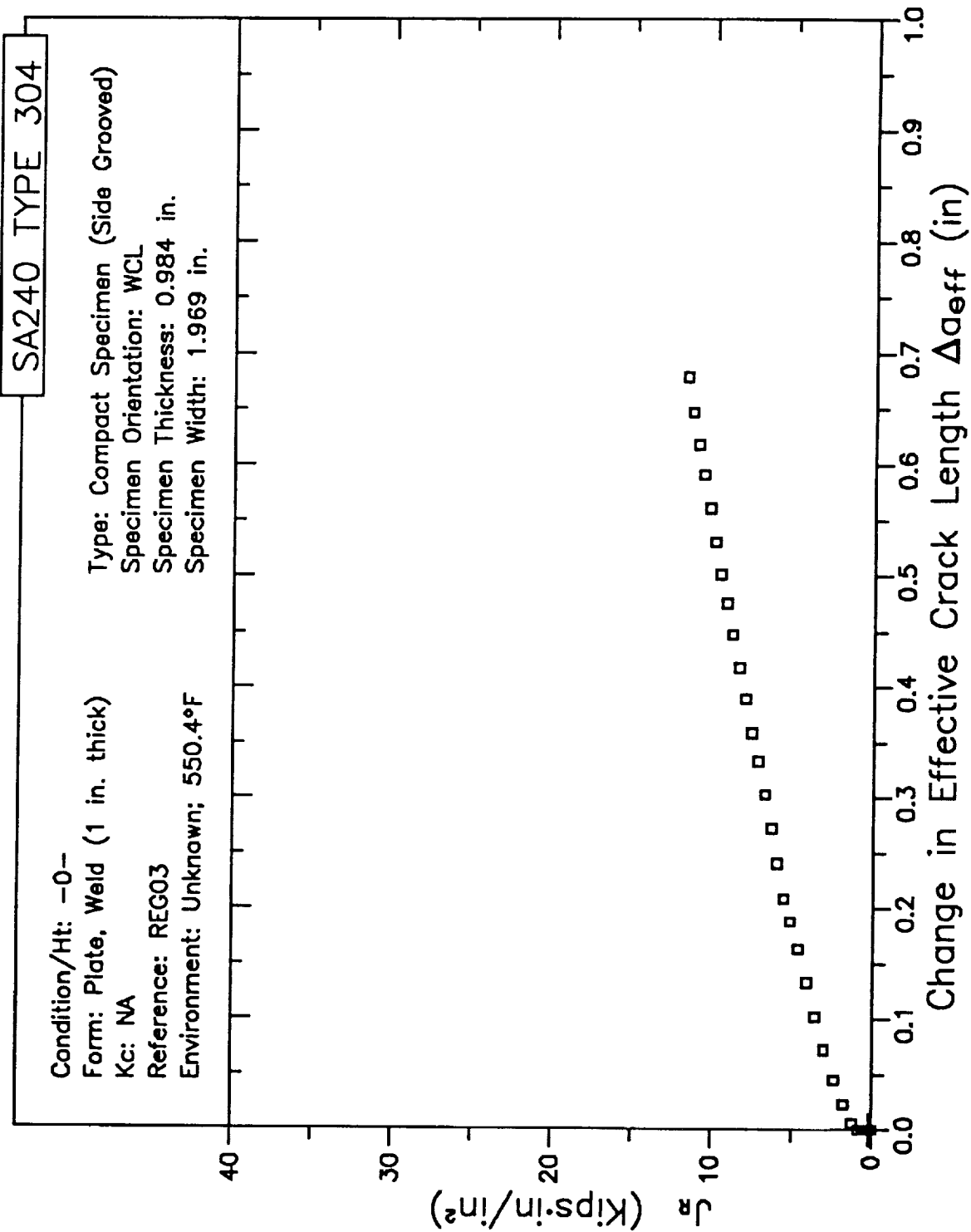
Specimen Thickness: 0.984 in.

Specimen Width: 1.969 in.





# RESISTANCE CURVE



# RESISTANCE CURVE

SA240 TYPE 304

Condition/Ht: -0-

Form: Plate, Weld (1 in. thick)

Kc: NA

Reference: REG03

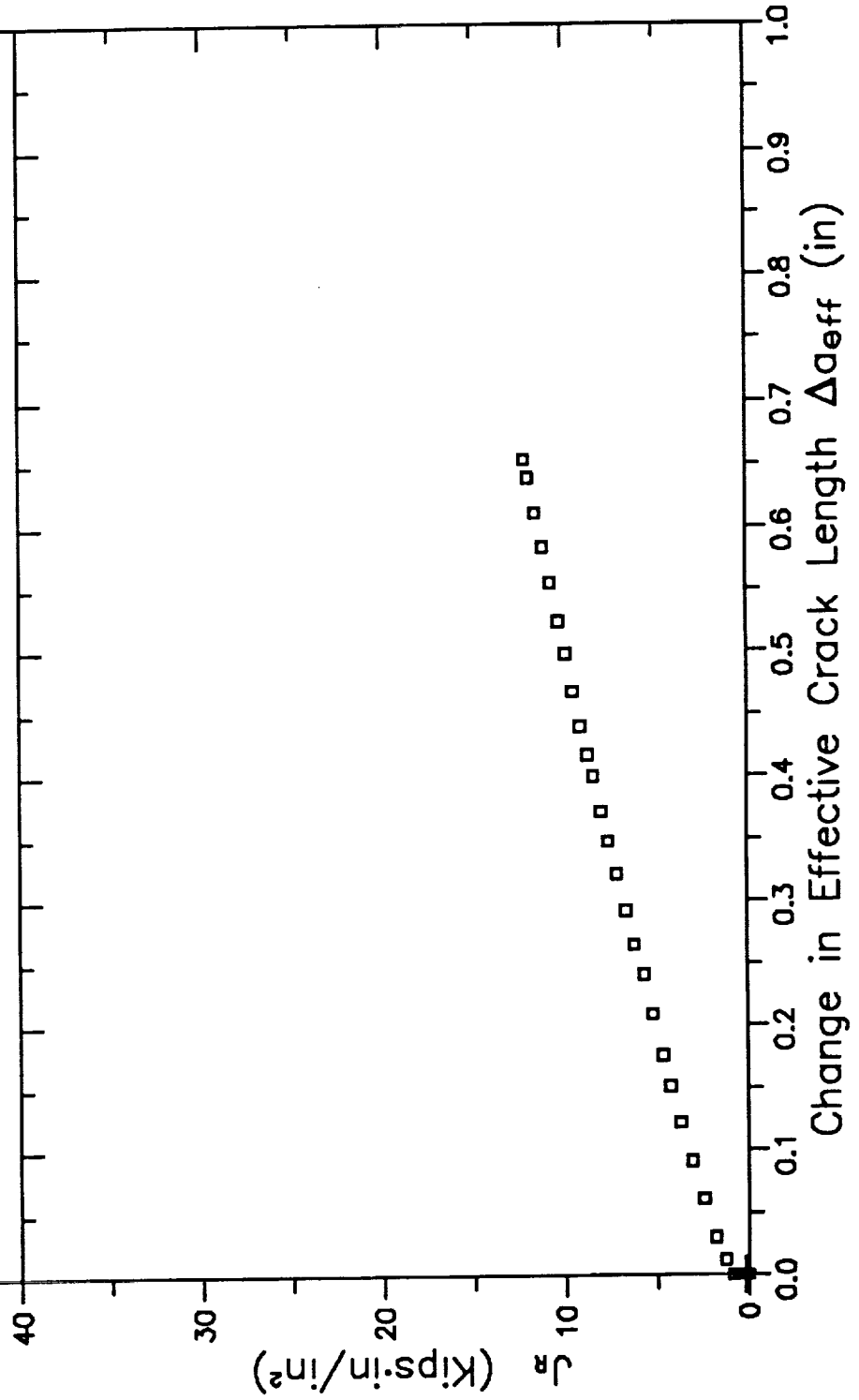
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)

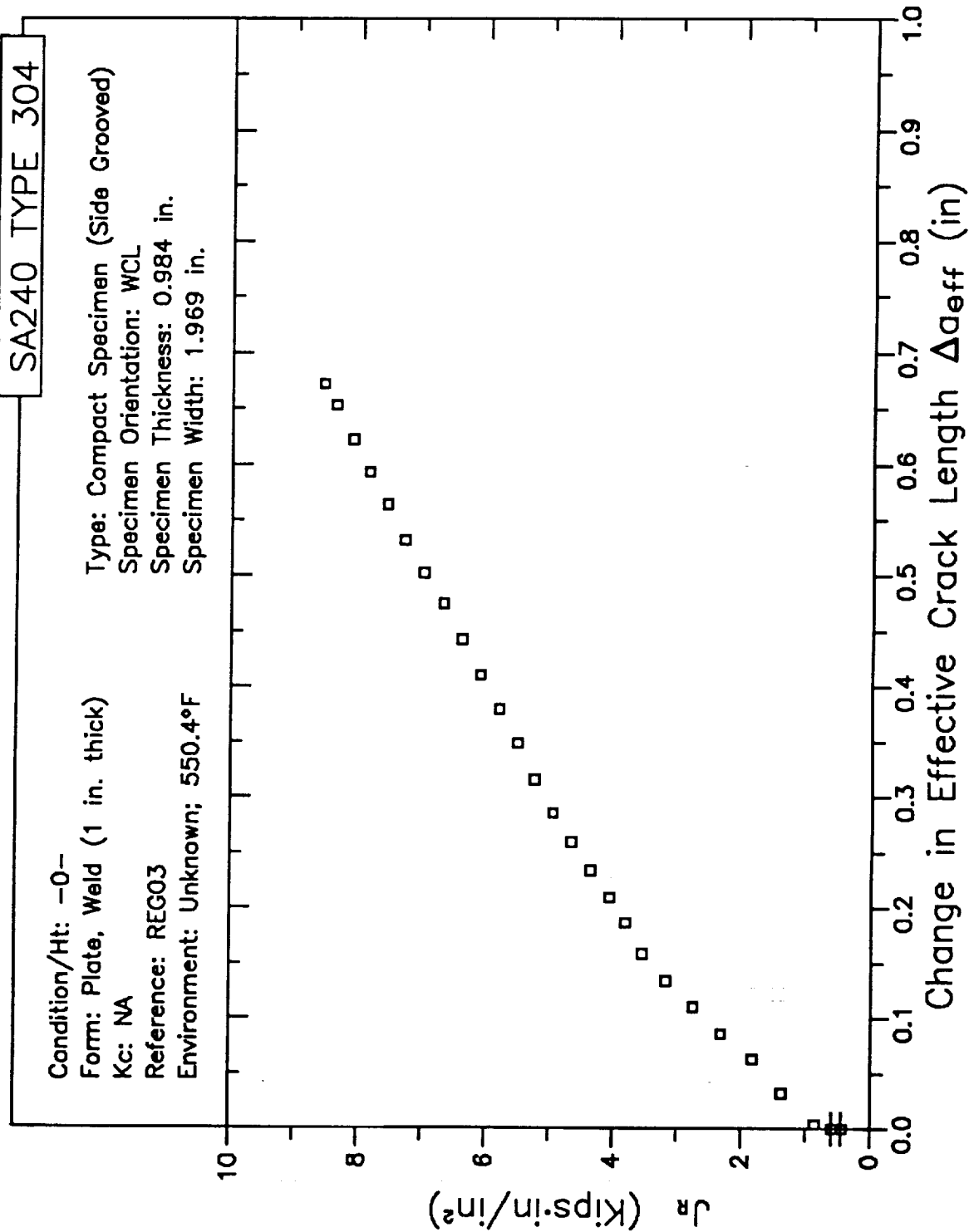
Specimen Orientation: WCL

Specimen Thickness: 0.984 in.

Specimen Width: 1.969 in.



# RESISTANCE CURVE



# RESISTANCE CURVE

SA240 TYPE 304

Condition/Ht: -0-

Form: Plate, Weld (1 in. thick)

Kc: NA

Reference: REG03

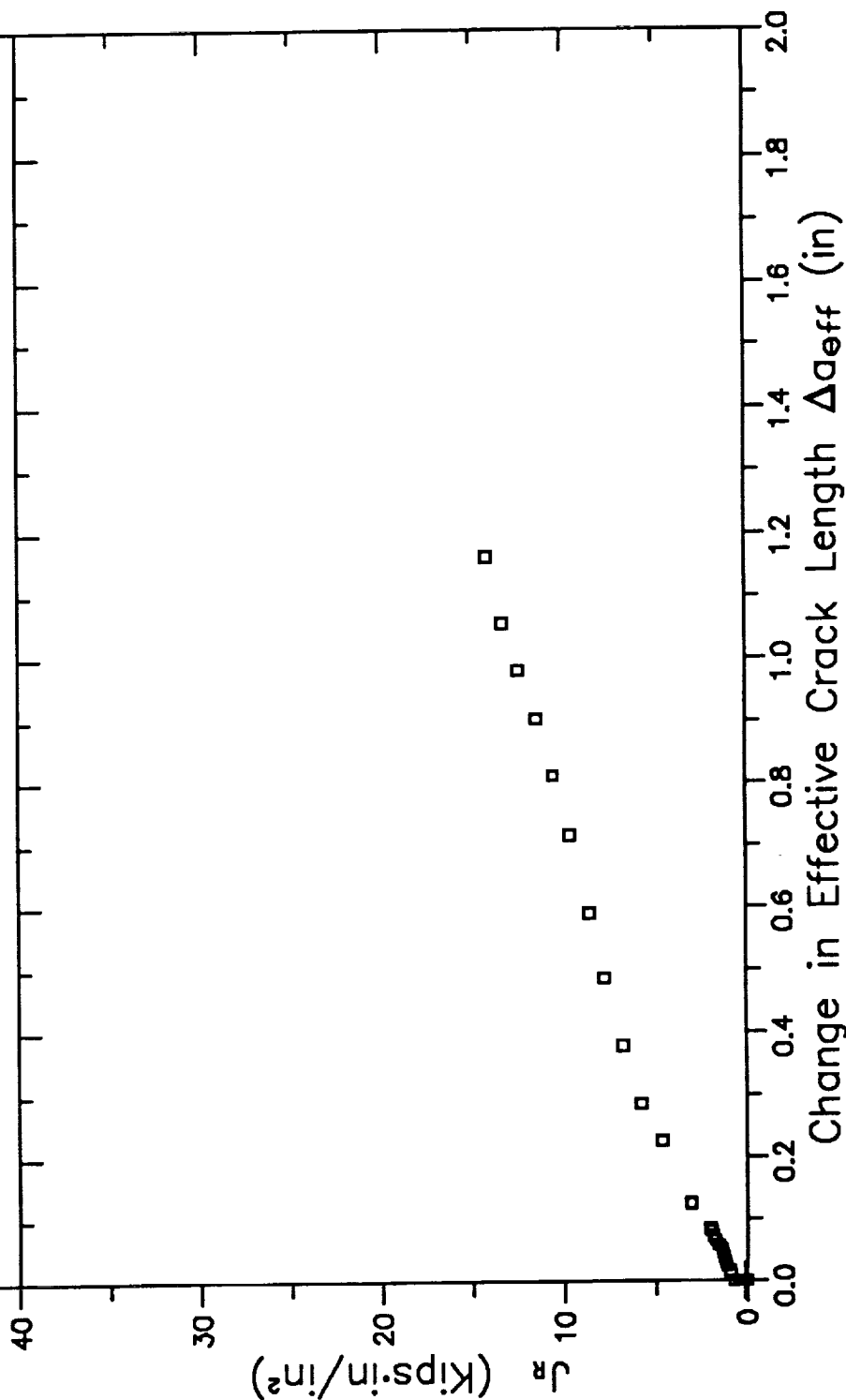
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)

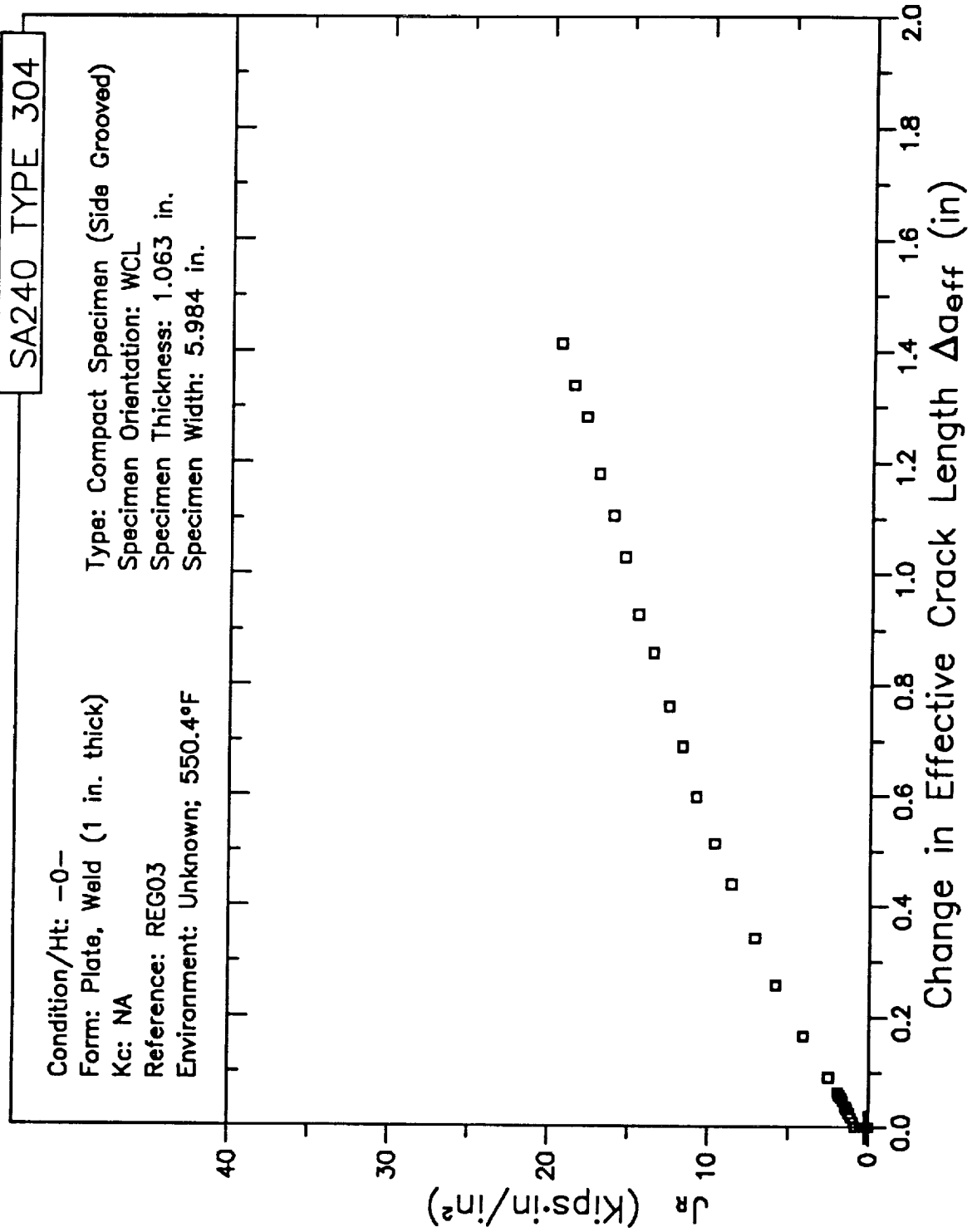
Specimen Orientation: WCL

Specimen Thickness: 1.024 in.

Specimen Width: 5.984 in.



# RESISTANCE CURVE



# RESISTANCE CURVE

SA240 TYPE 304

Condition/Ht: -0-

Form: Plate, Weld (1 in. thick)

Kc: NA

Reference: REG03

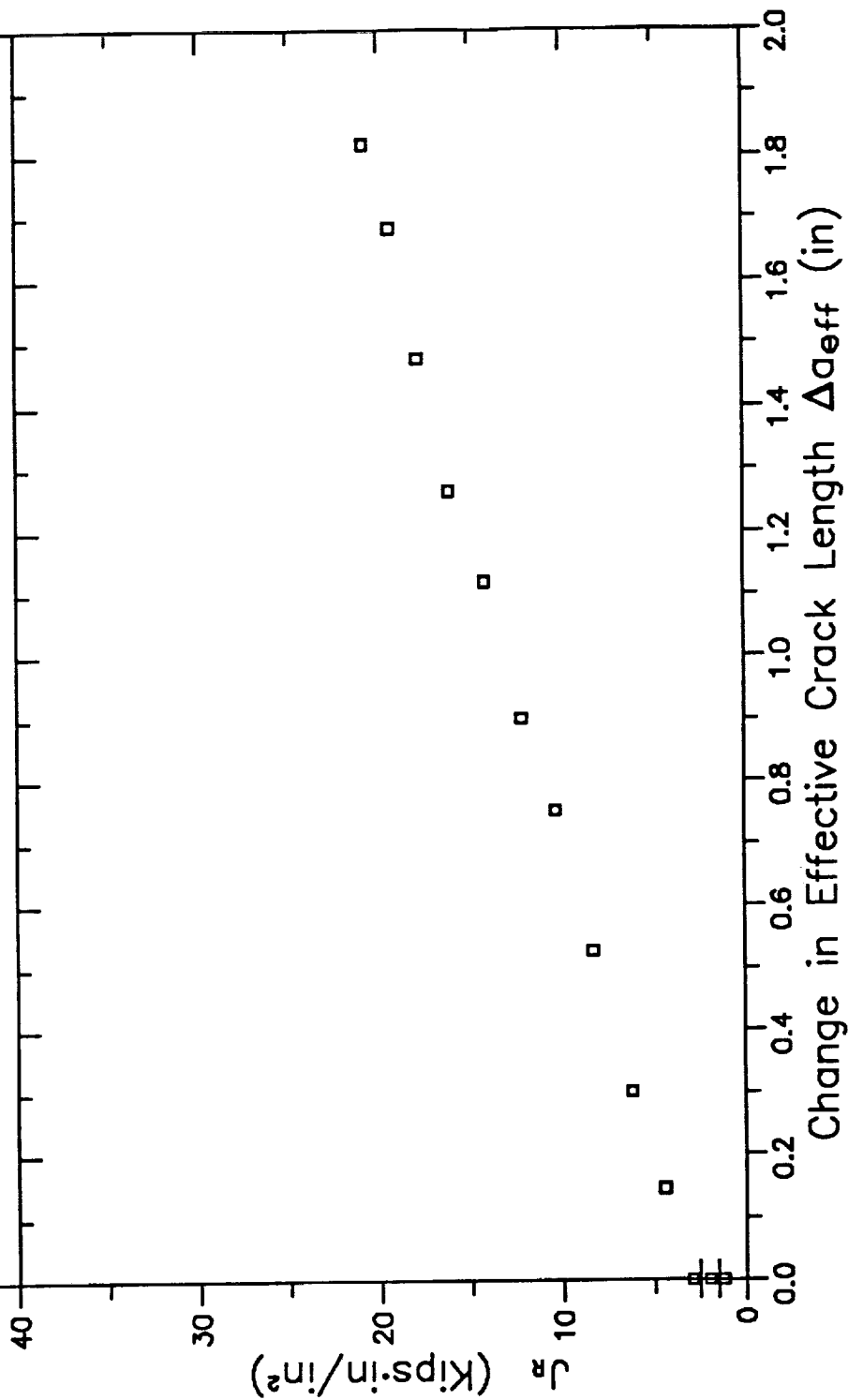
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)

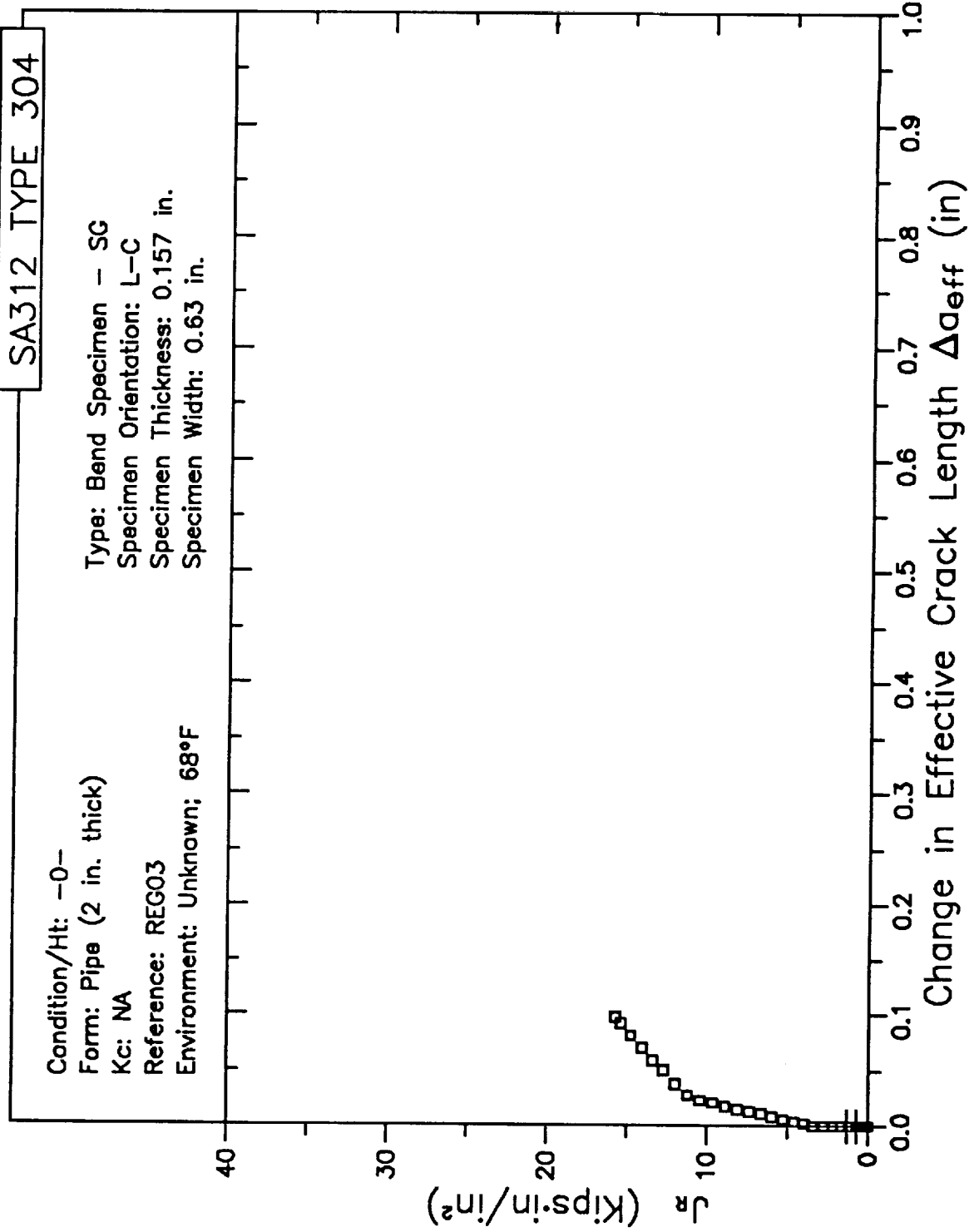
Specimen Orientation: WCL

Specimen Thickness: 1.142 in.

Specimen Width: 19.016 in.



# RESISTANCE CURVE

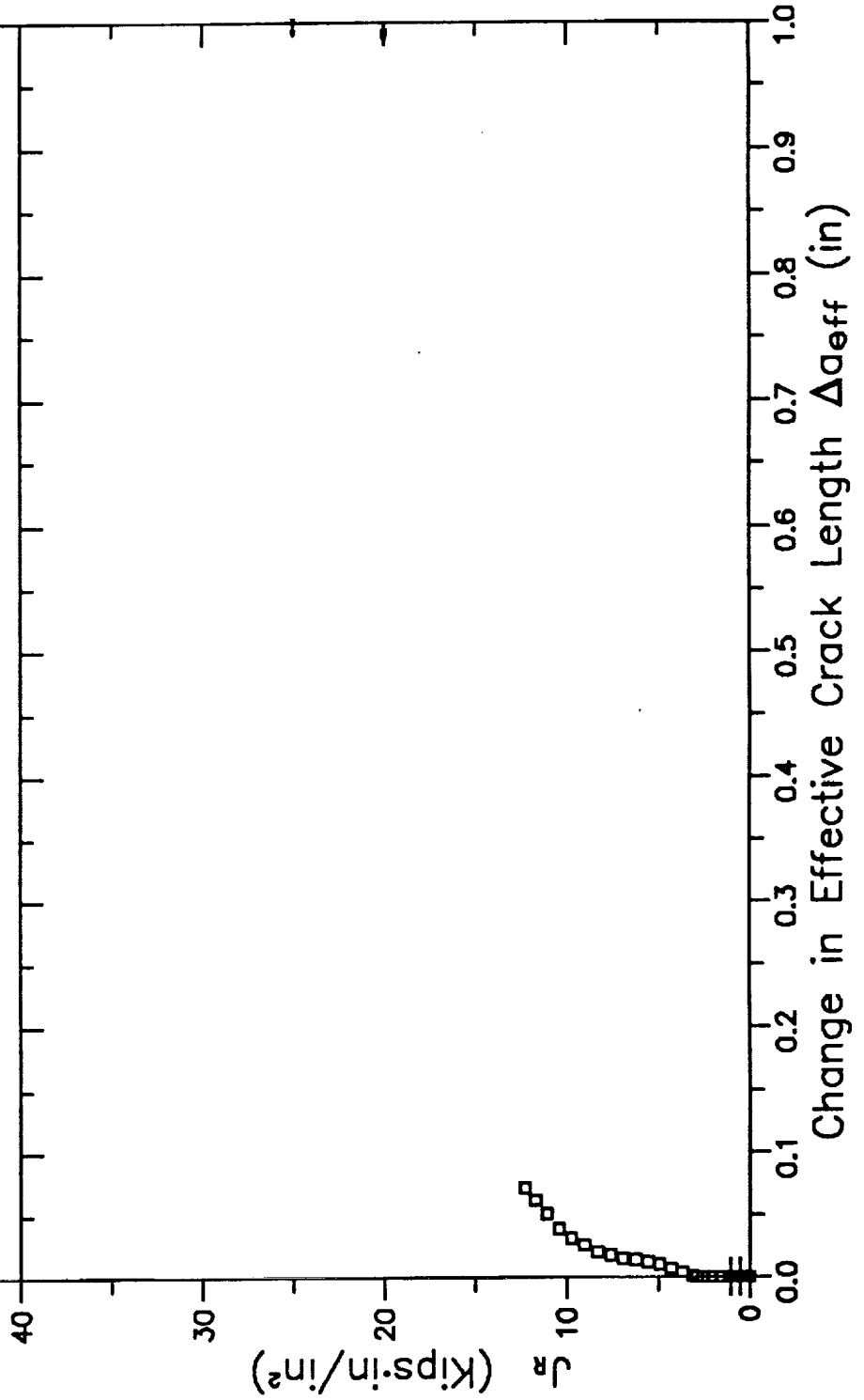


# RESISTANCE CURVE

SA312 TYPE 304

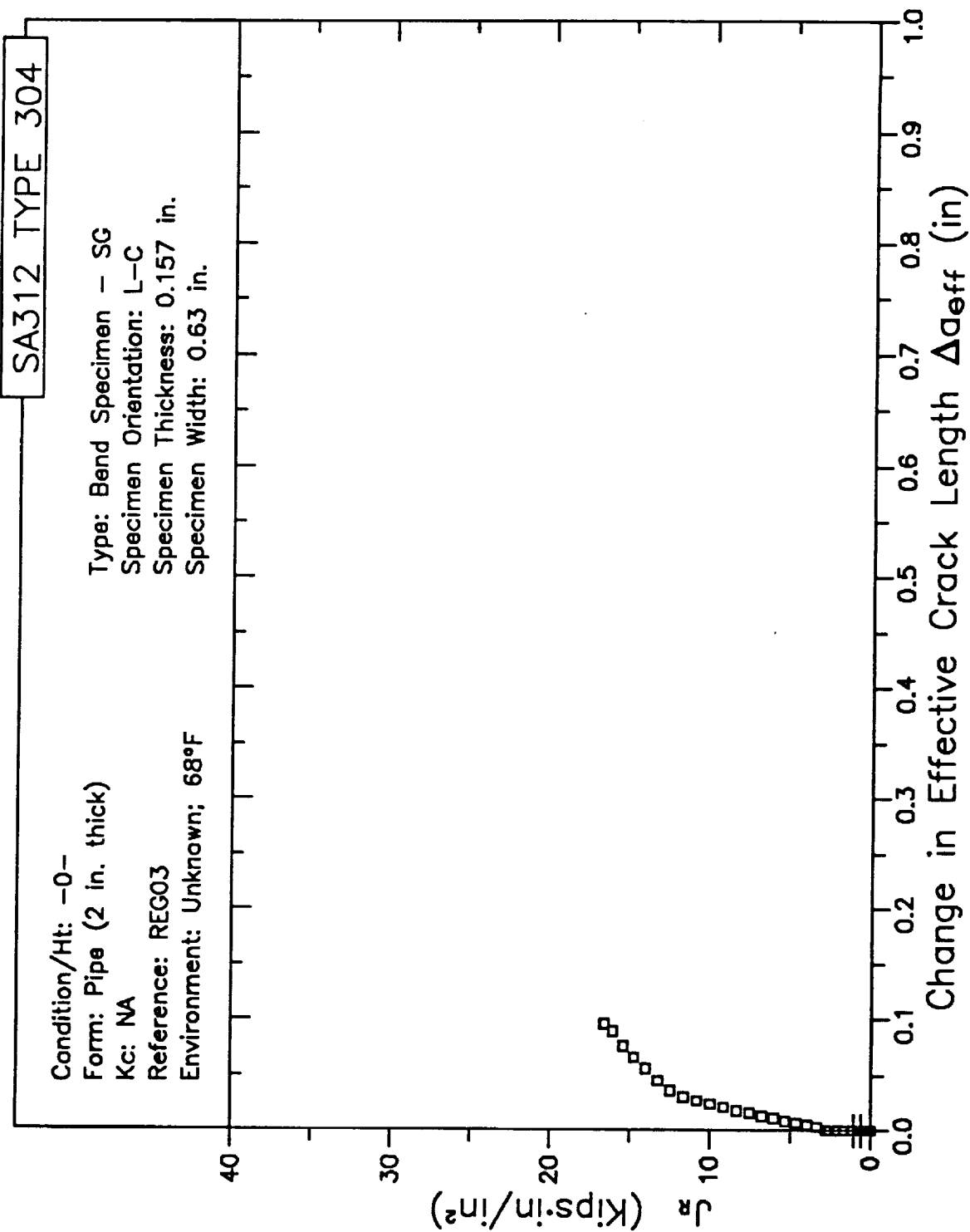
Condition/Ht: -0-  
 Form: Pipe (2 in. thick)  
 Kc: NA  
 Reference: REG03  
 Environment: Unknown; 68°F

Type: Bend Specimen - SG  
 Specimen Orientation: L-C  
 Specimen Thickness: 0.157 in.  
 Specimen Width: 0.63 in.





# RESISTANCE CURVE



# RESISTANCE CURVE

SA351-CF3

Condition/Ht: ANNEALED 10000 HRS AT 662 F

Form: Static Cast Pump Impeller

Kc: NA

Reference: REG02

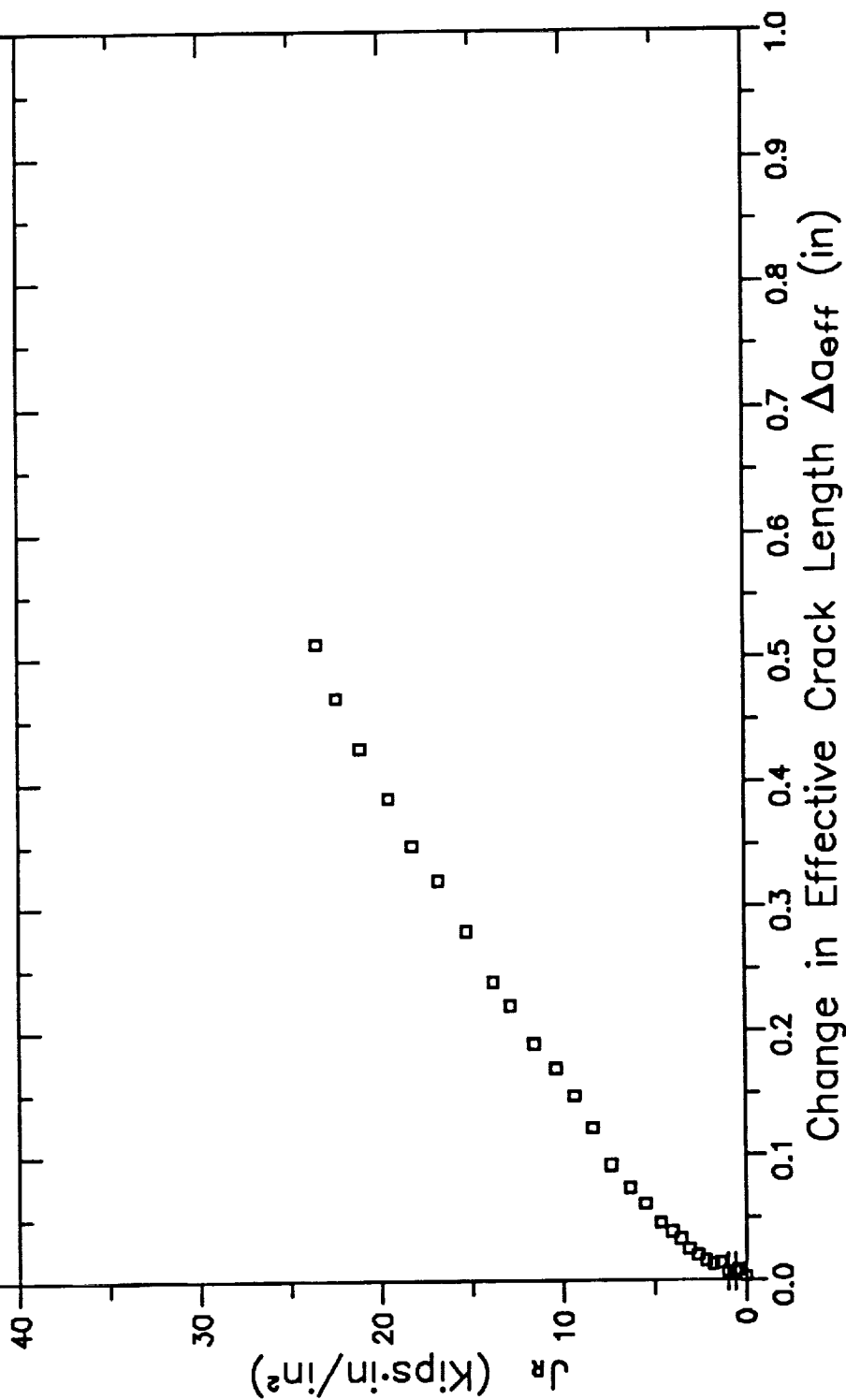
Environment: Unknown; 77°F

Type: Compact Specimen (Side Grooved)

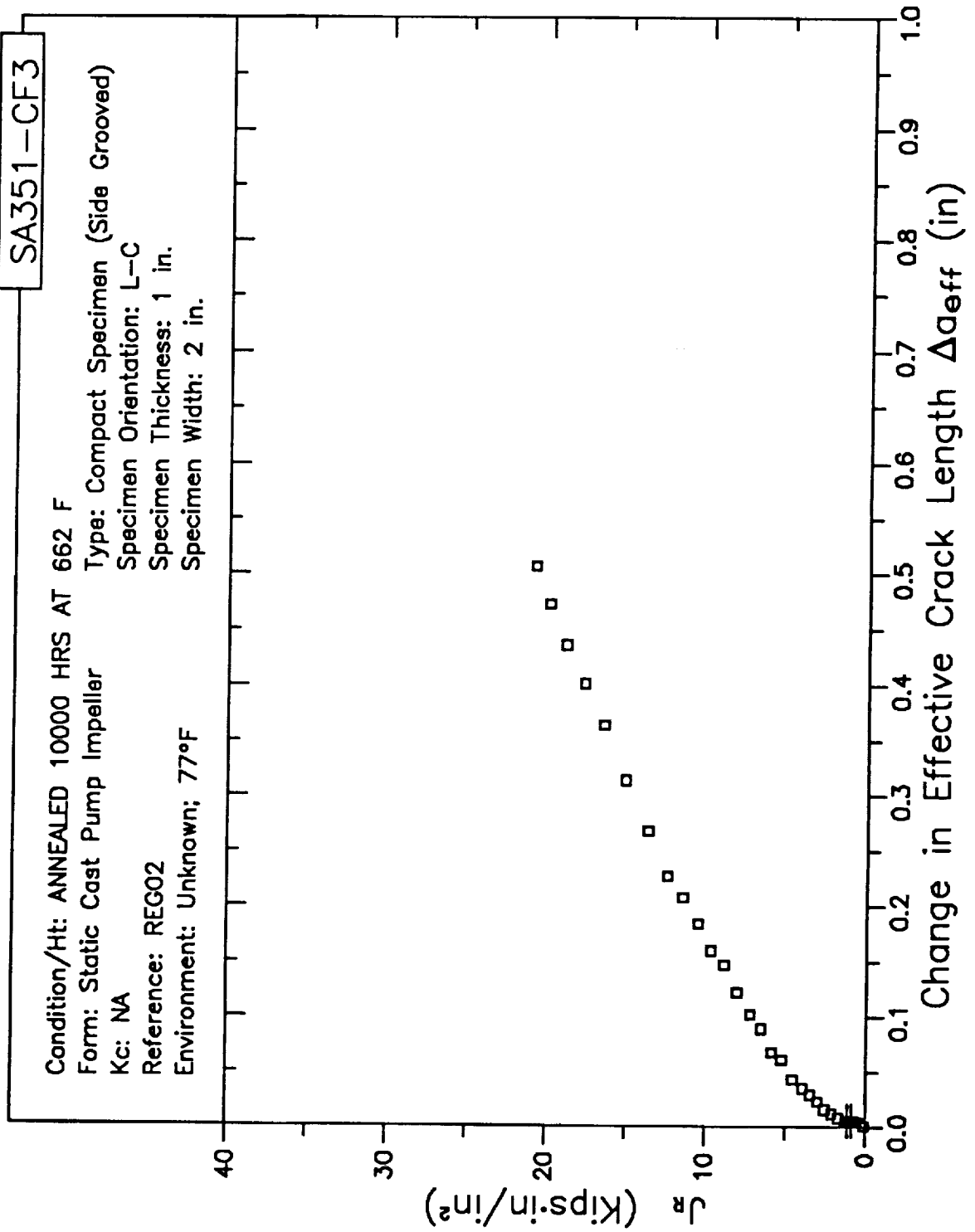
Specimen Orientation: L-C

Specimen Thickness: 1 in.

Specimen Width: 2 in.



# RESISTANCE CURVE



# RESISTANCE CURVE

SA351-CF3

Condition/Ht: ANNEALED 10000 HRS AT 662 F

Form: Static Cast Pump Impeller

Kc: NA

Reference: REG02

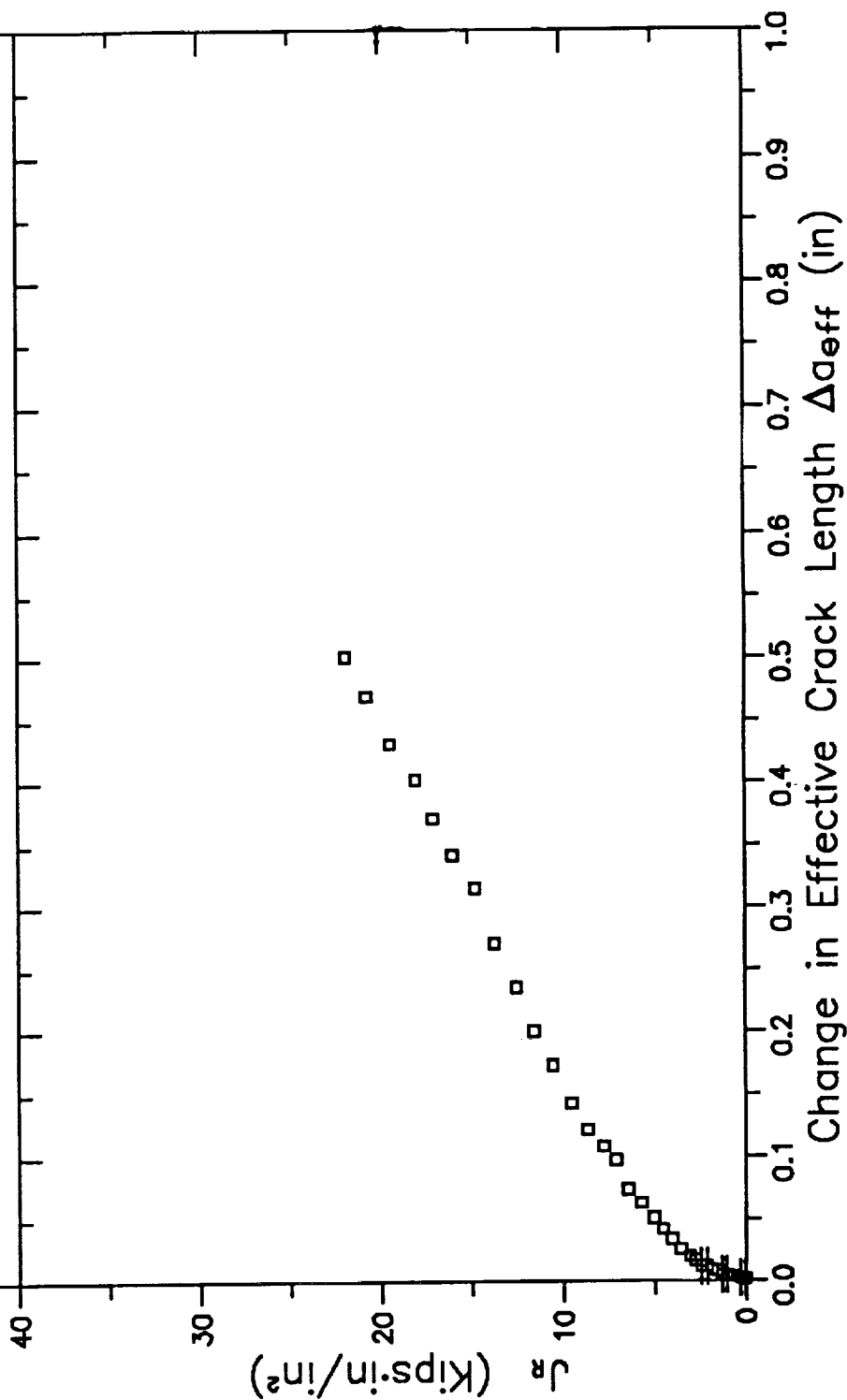
Environment: Unknown; 77°F

Type: Compact Specimen (Side Grooved)

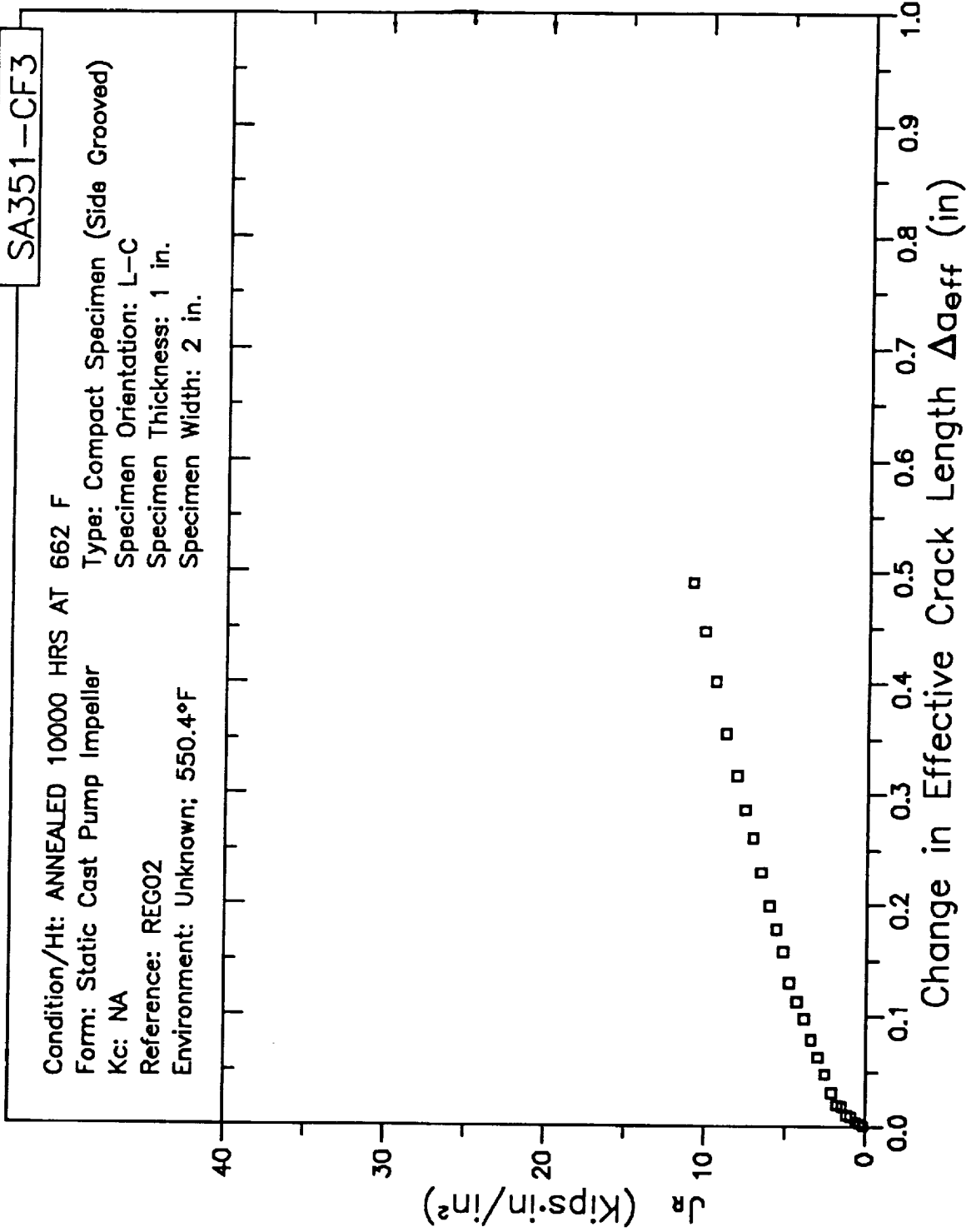
Specimen Orientation: C-L

Specimen Thickness: 1 in.

Specimen Width: 2 in.



# RESISTANCE CURVE



# RESISTANCE CURVE

SA351-CF3

Condition/Ht: ANNEALED 10000 HRS AT 662 F

Form: Static Cast Pump Impeller

Kc: NA

Reference: REG02

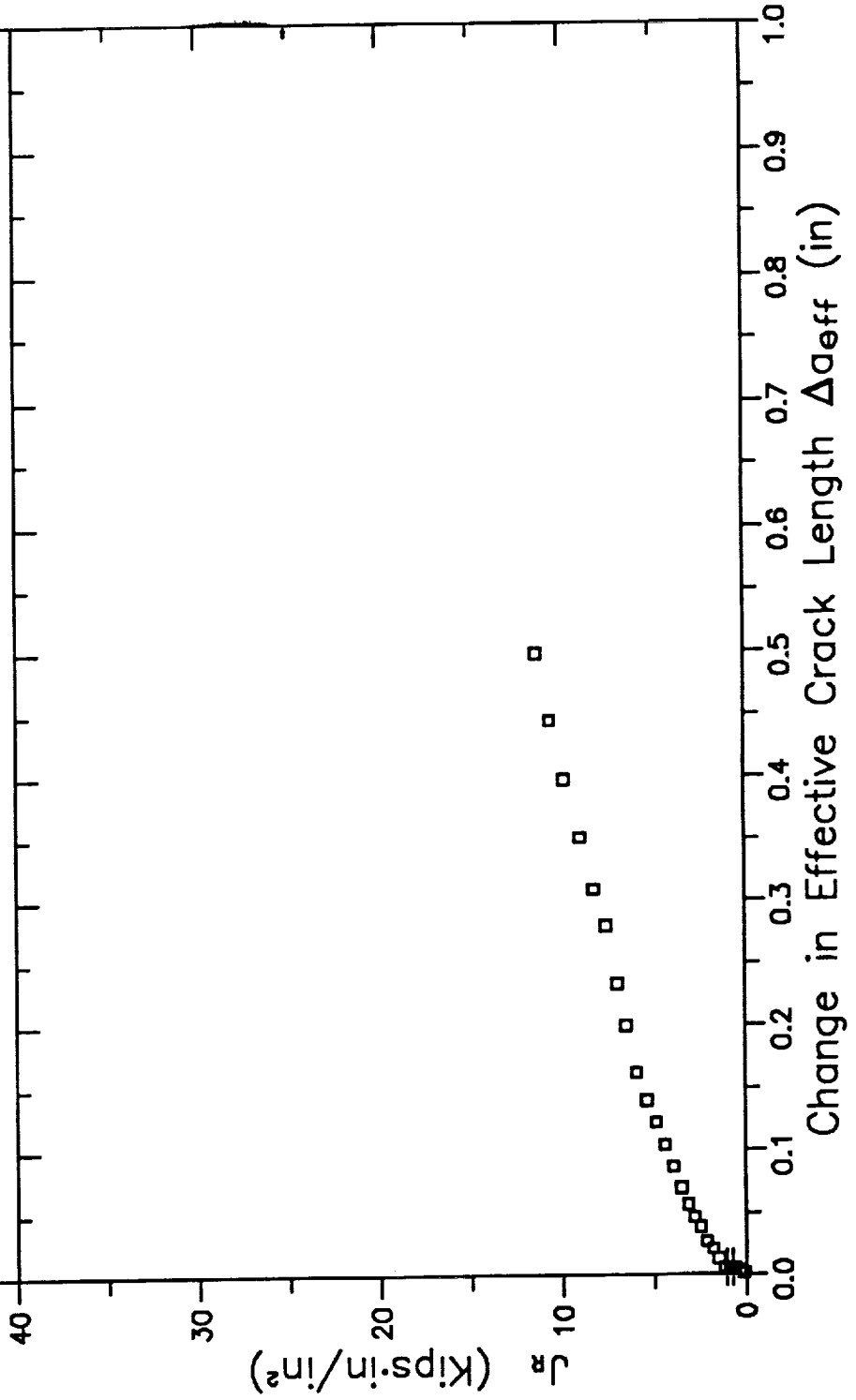
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)

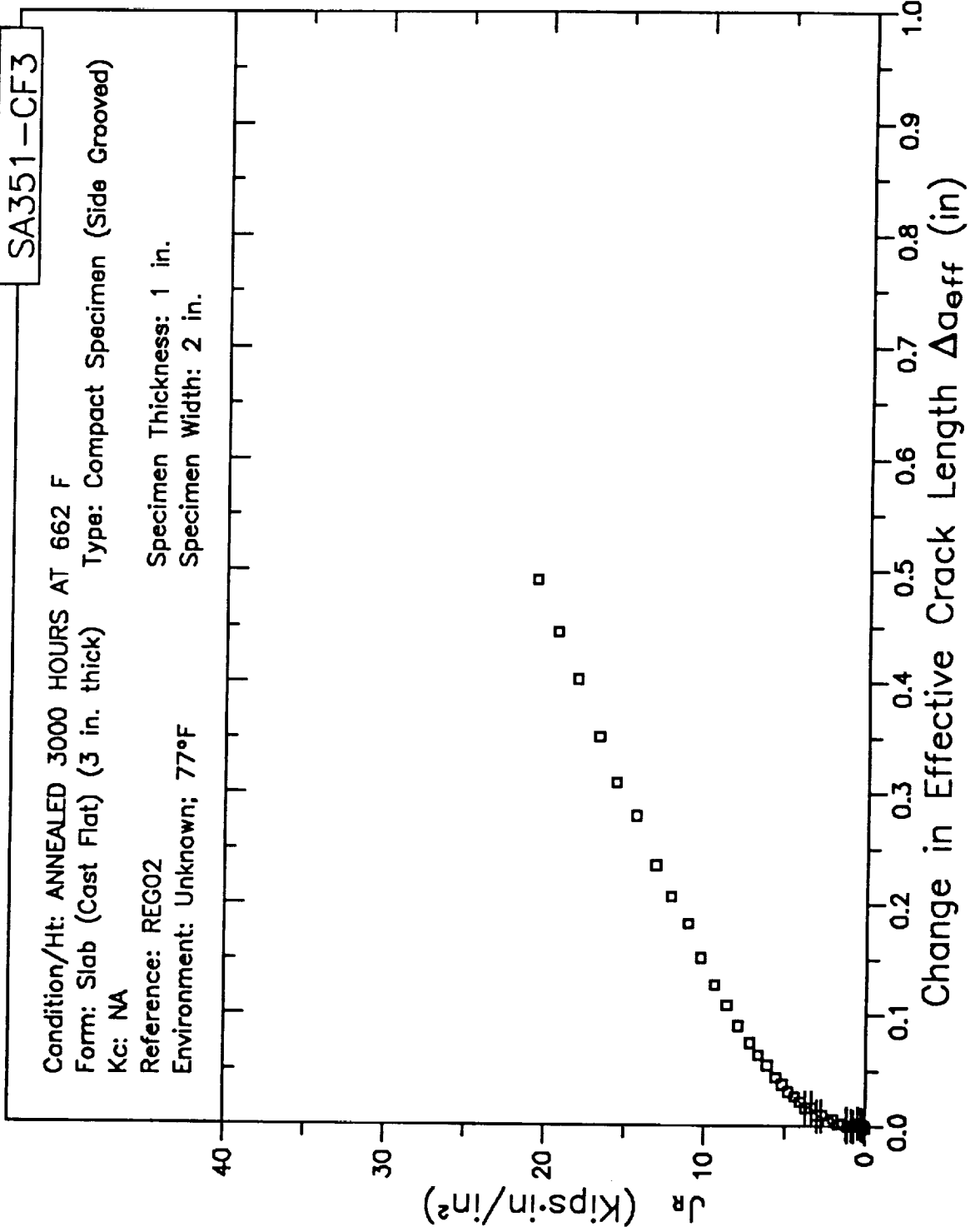
Specimen Orientation: L-C

Specimen Thickness: 1 in.

Specimen Width: 2 in.



# RESISTANCE CURVE



# RESISTANCE CURVE

SA351-CF3

Condition/Ht: ANNEALED 3000 HOURS AT 662 F

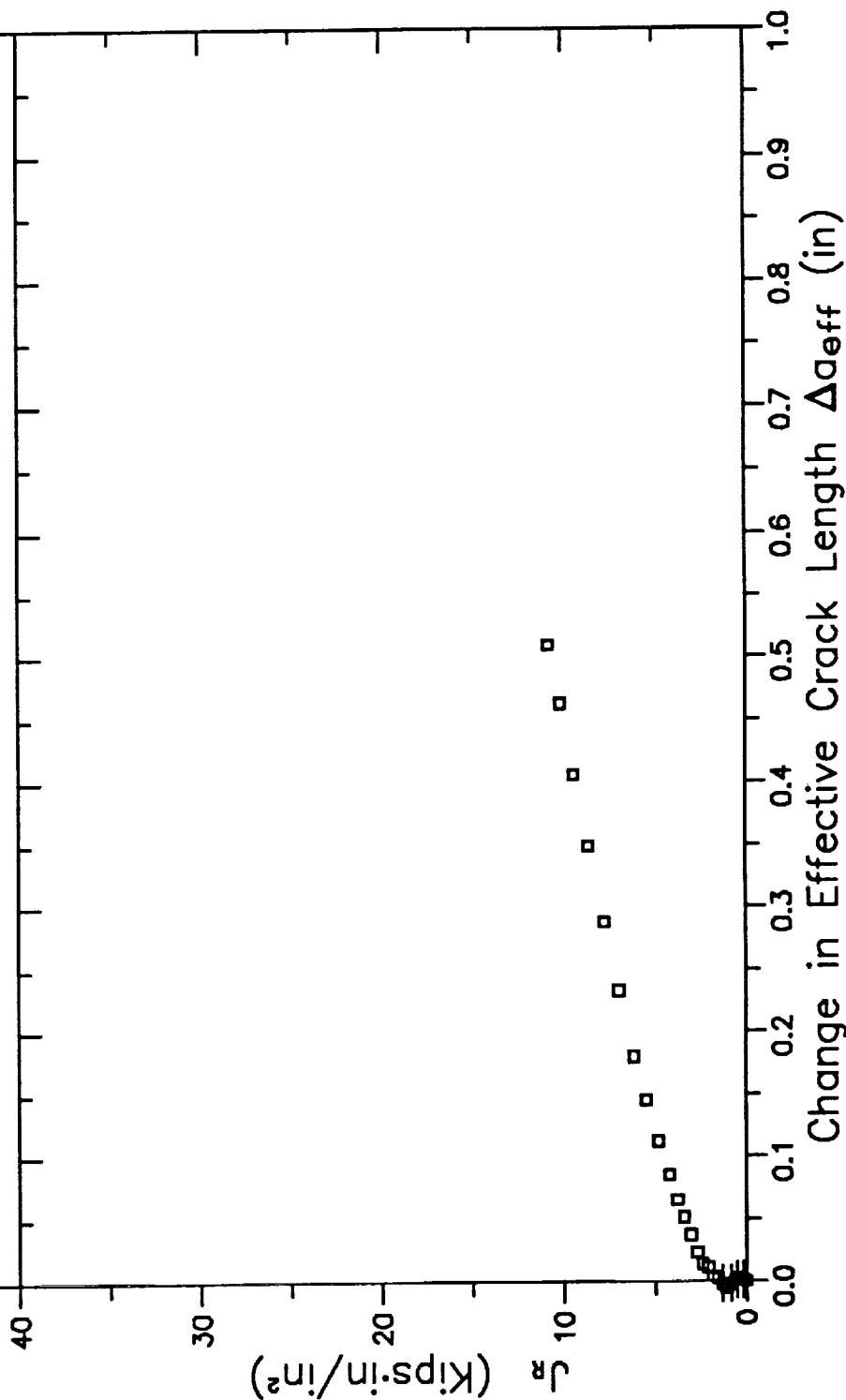
Form: Slab (Cast Flat) (3 in. thick) Type: Compact Specimen (Side Grooved)

Kc: NA

Reference: REG02

Specimen Thickness: 1 in.

Environment: Unknown; 554°F Specimen Width: 2 in.





# RESISTANCE CURVE

SA351-CF3

Condition/Ht: ANNEALED 3000 HOURS AT 752 F

Form: Slab (Cast Flat) (3 in. thick)

Type: Compact Specimen (Side Grooved)

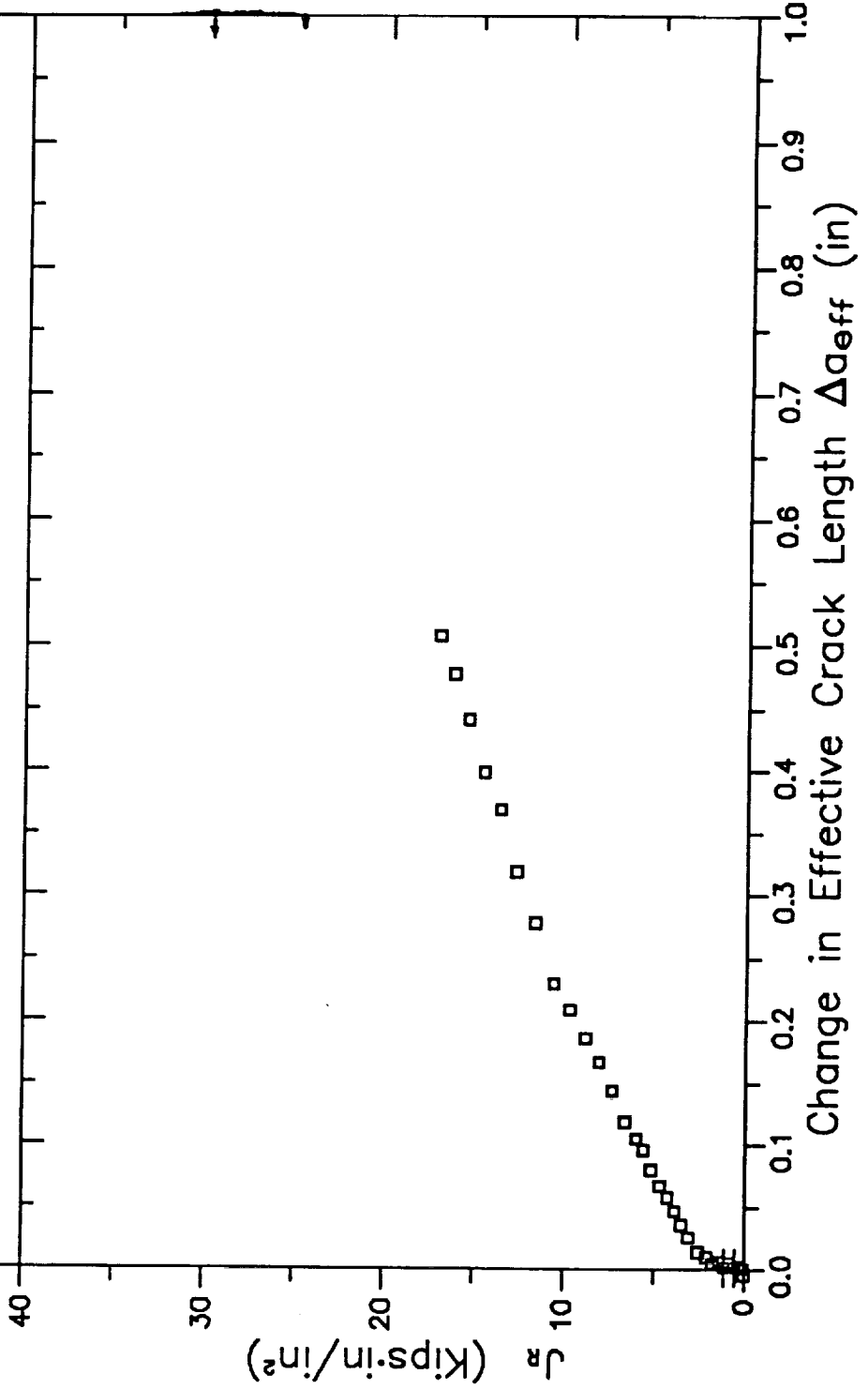
Kc: NA

Reference: REGO2

Specimen Thickness: 1 in.

Environment: Unknown; 77°F

Specimen Width: 2 in.



# RESISTANCE CURVE

SA351-CF3

Condition/Ht: ANNEALED 3000 HOURS AT 752 F

Form: Slab (Cast Flat) (3 in. thick)

Type: Compact Specimen (Side Grooved)

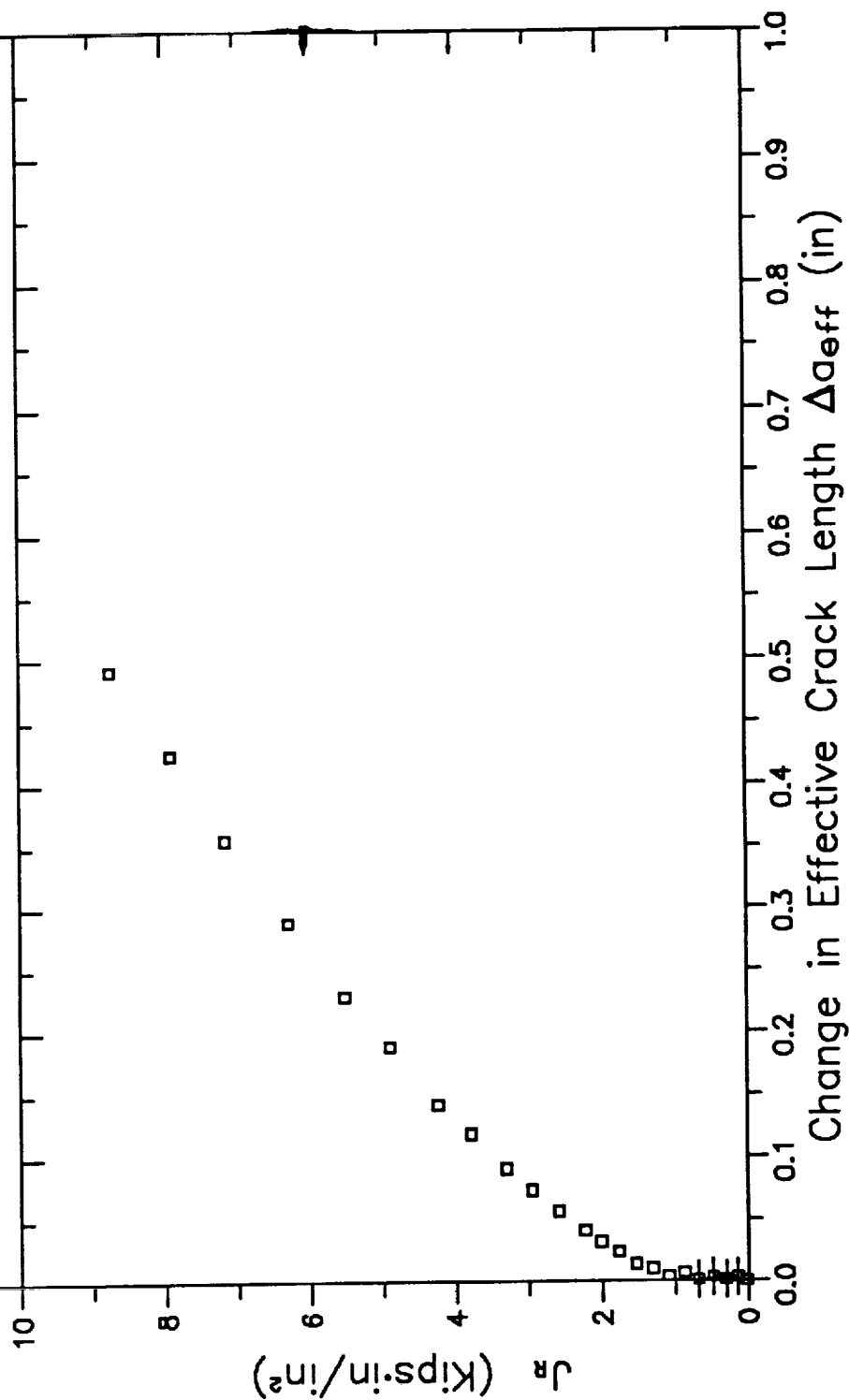
Kc: NA

Reference: REG02

Specimen Thickness: 1 in.

Environment: Unknown; 554°F

Specimen Width: 2 in.



A3-52

# RESISTANCE CURVE

SA351-CF3

Condition/Ht: ANNEALED 3000 HOURS AT 842 F

Form: Slab (Cast Flat) (3 in. thick)

Type: Compact Specimen (Side Grooved)

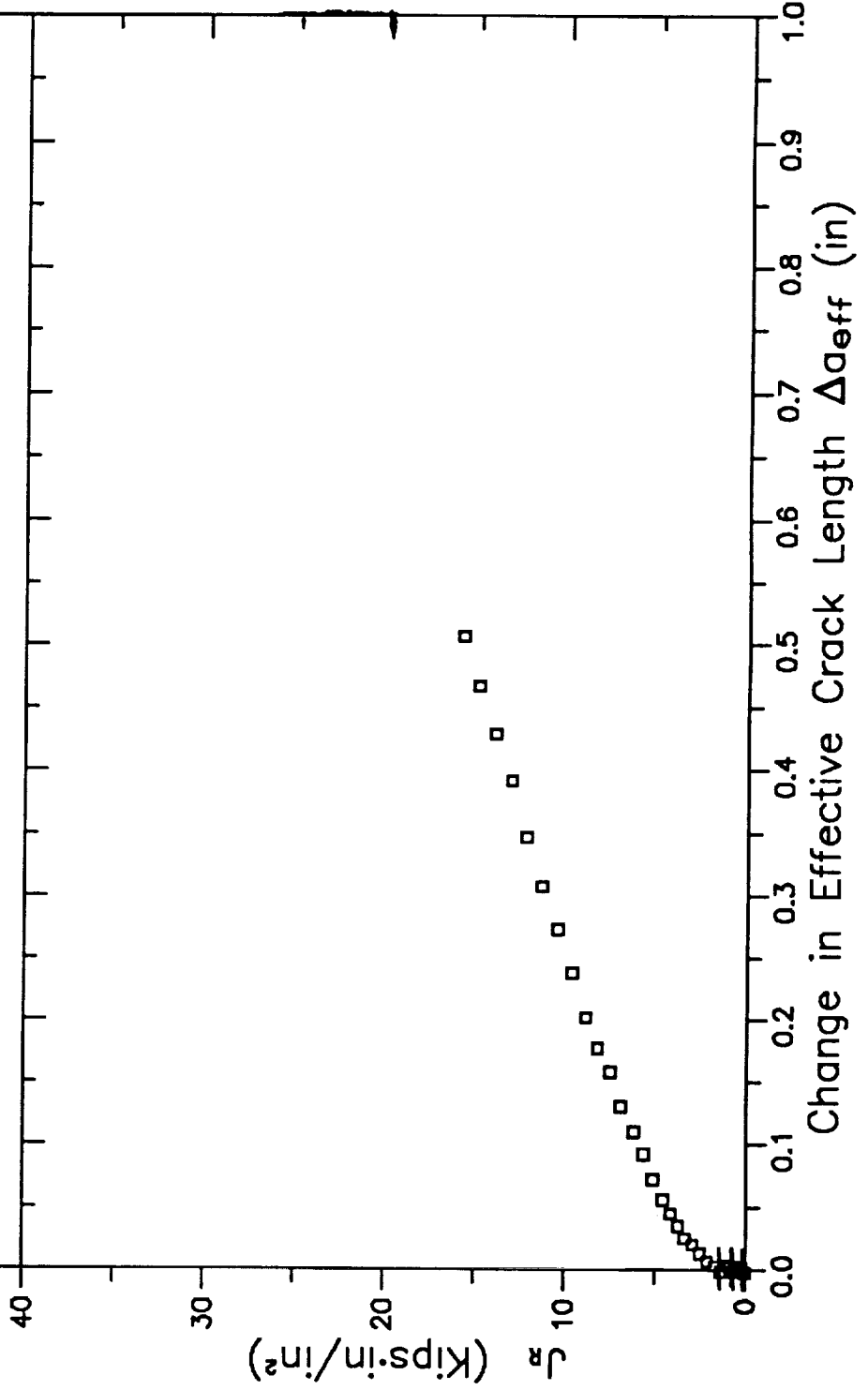
Kc: NA

Reference: REG02

Specimen Thickness: 1 in.

Environment: Unknown; 77°F

Specimen Width: 2 in.



# RESISTANCE CURVE

SA351-CF3

Condition/Ht: ANNEALED 3000 HOURS AT 842 F

Form: Slab (Cast Flat) (3 in. thick) Type: Compact Specimen (Side Grooved)

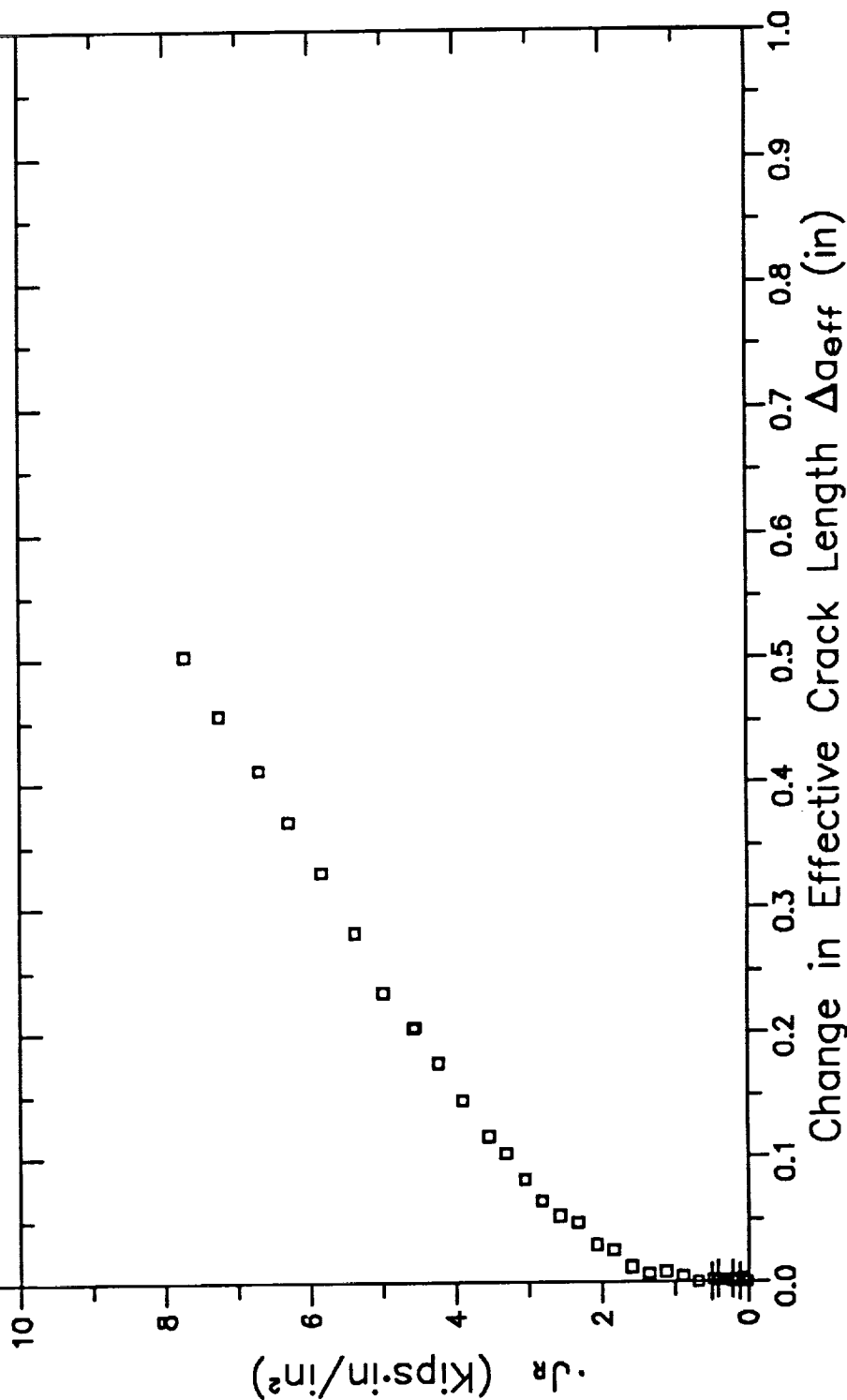
Kc: NA

Reference: REG02

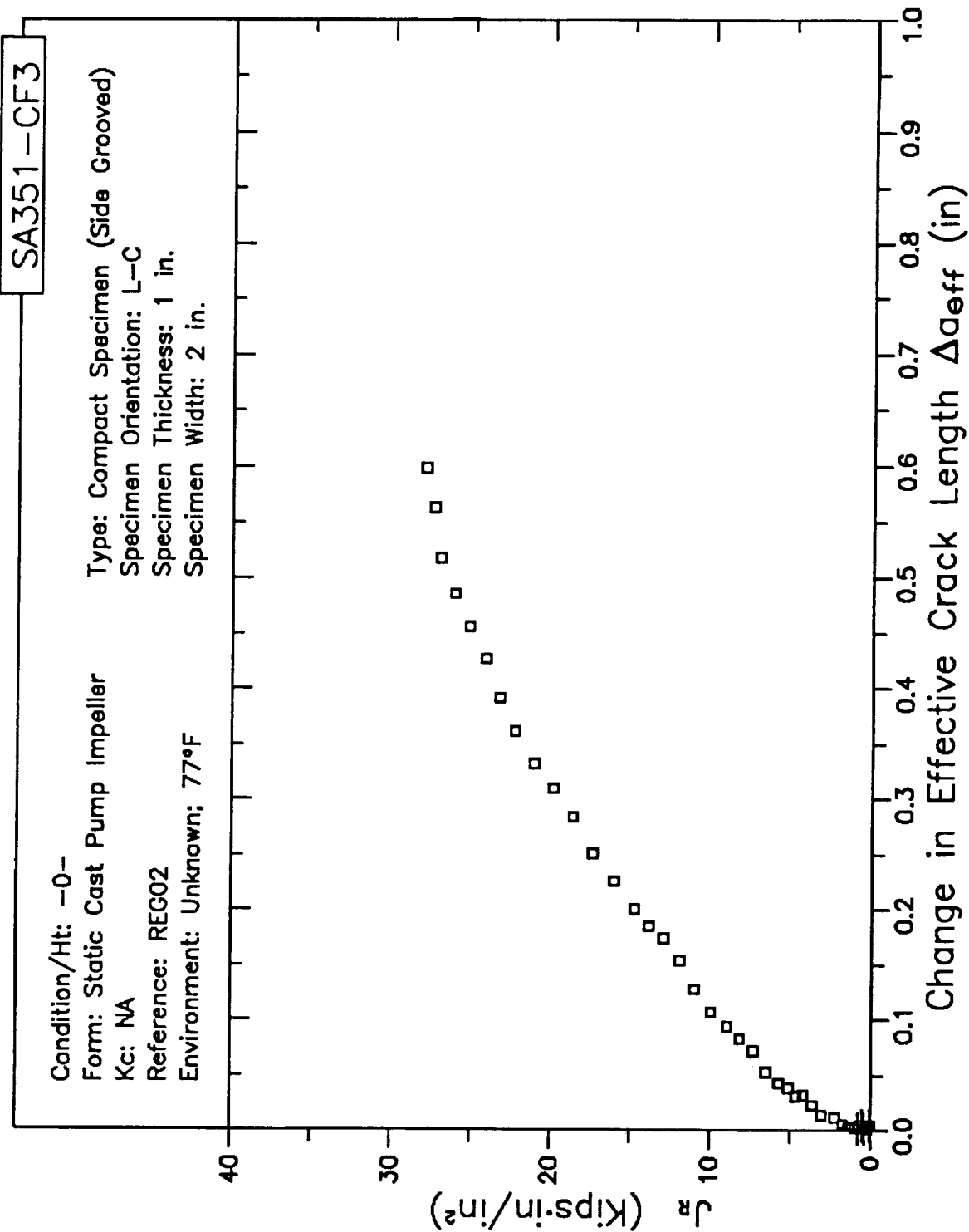
Specimen Thickness: 1 in.

Environment: Unknown; 554°F

Specimen Width: 2 in.



# RESISTANCE CURVE



# RESISTANCE CURVE

SA351-CF3

Condition/Ht: -0-

Form: Static Cast Pump Impeller

Kc: NA

Reference: REG02

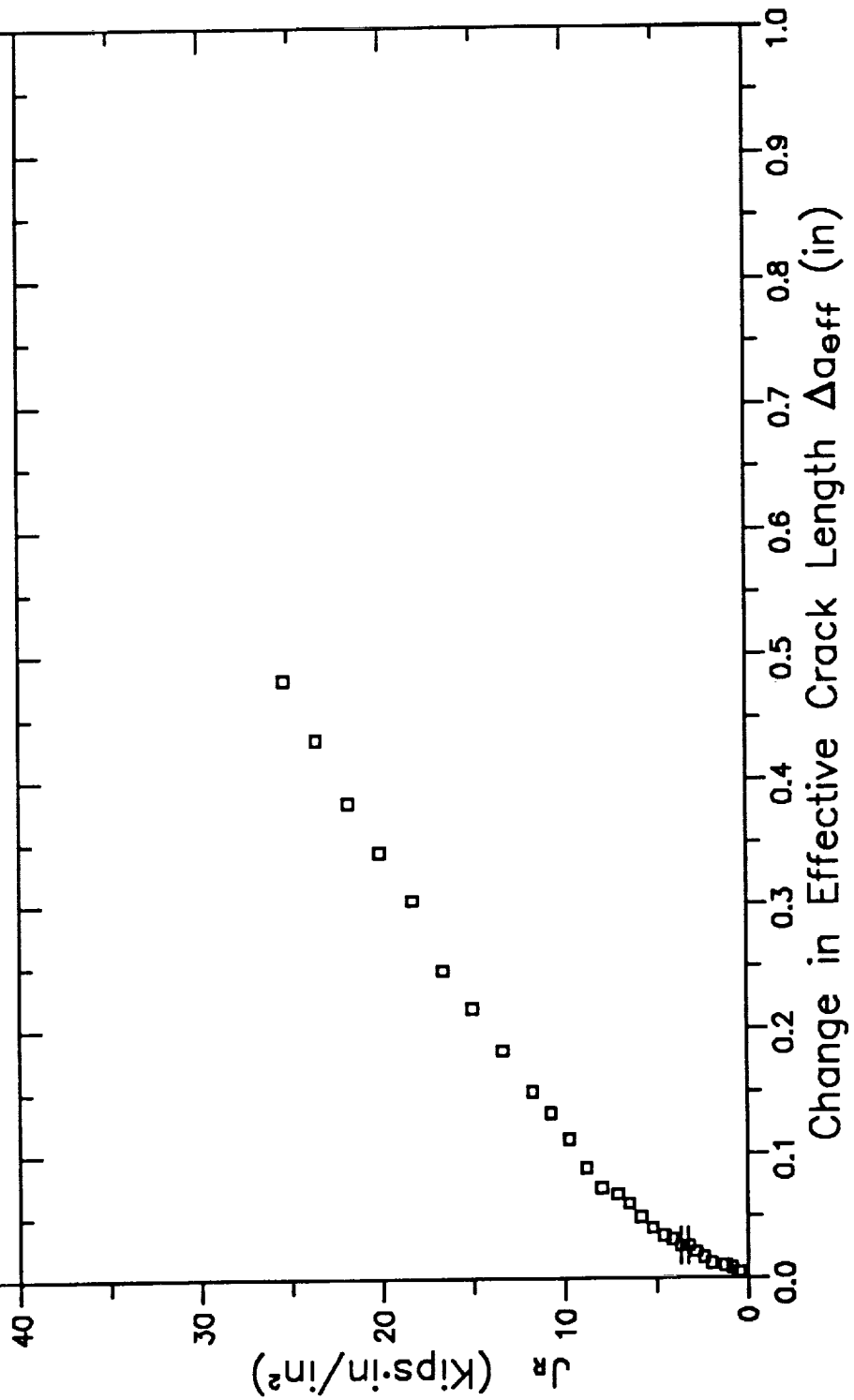
Environment: Unknown; 77°F

Type: Compact Specimen (Side Grooved)

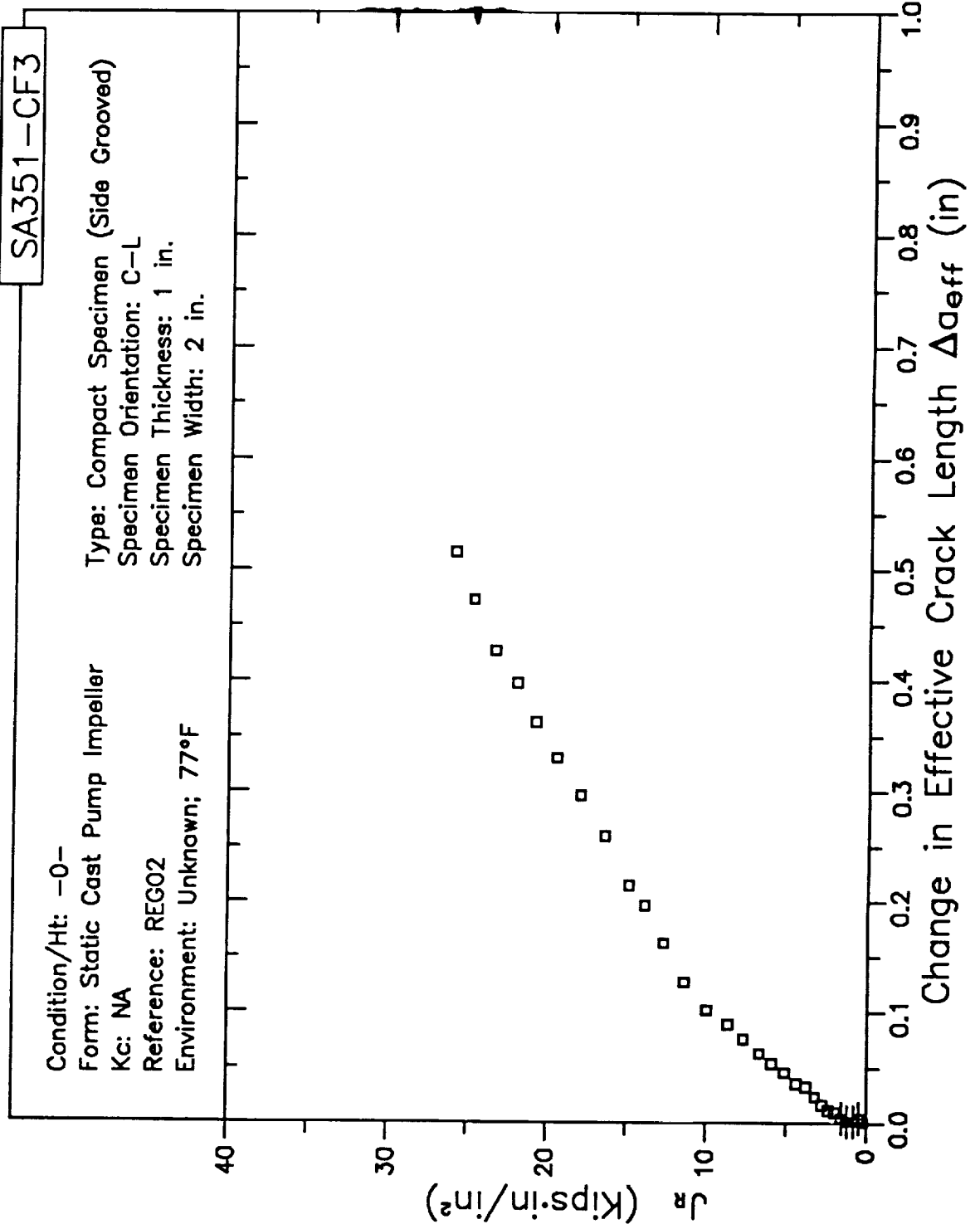
Specimen Orientation: L-C

Specimen Thickness: 1 in.

Specimen Width: 2 in.



# RESISTANCE CURVE



# RESISTANCE CURVE

SA351-CF3

Condition/Ht: -0-

Form: Slab (Cast Flat) (3 in. thick)

Type: Compact Specimen (Side Grooved)

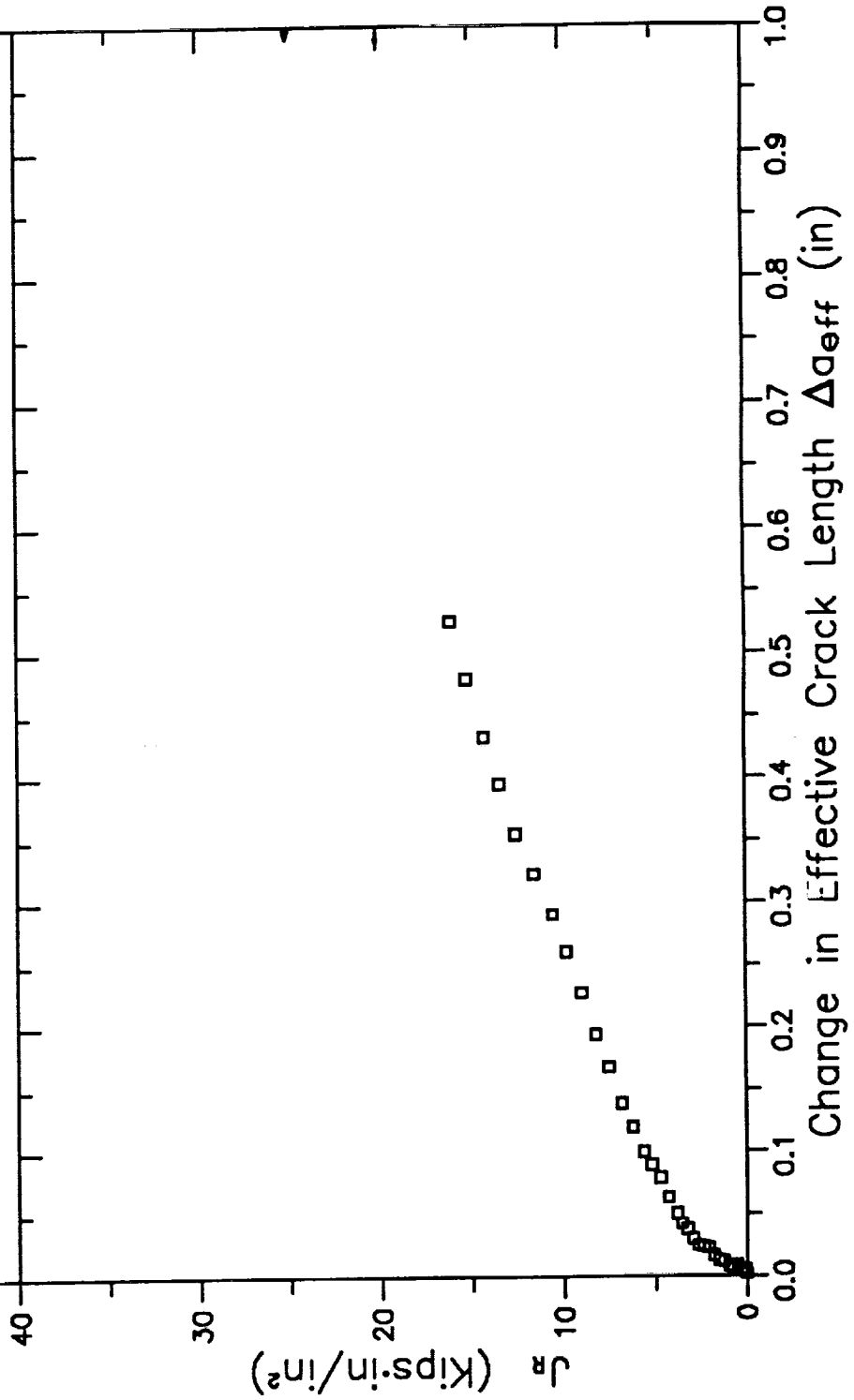
Kc: NA

Reference: REG02

Specimen Thickness: 1 in.

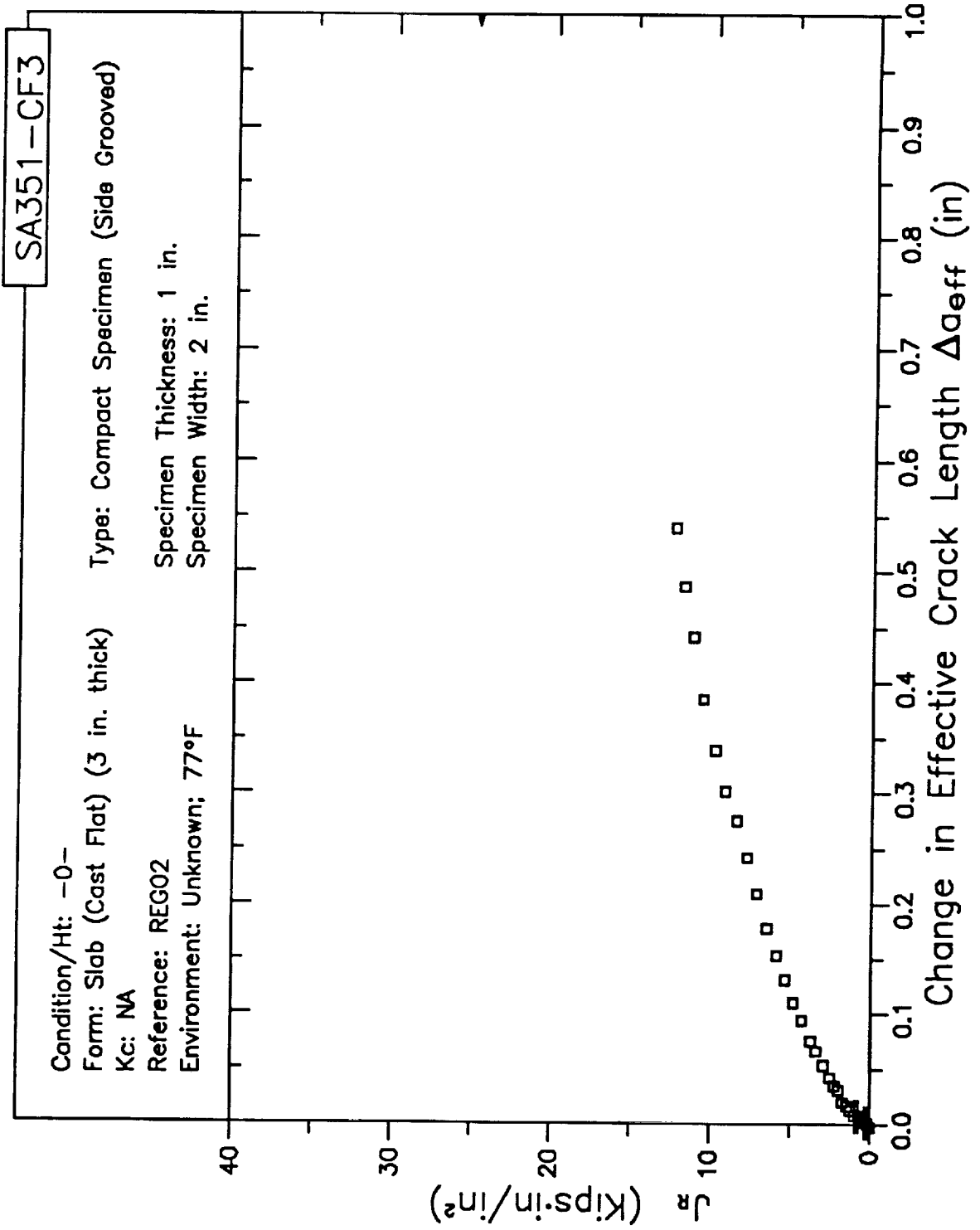
Environment: Unknown; 77°F

Specimen Width: 2 in.





# RESISTANCE CURVE



# RESISTANCE CURVE

SA351-CF3

Condition/Ht: -0-

Form: Static Cast Pump Impeller

Kc: NA

Reference: REG02

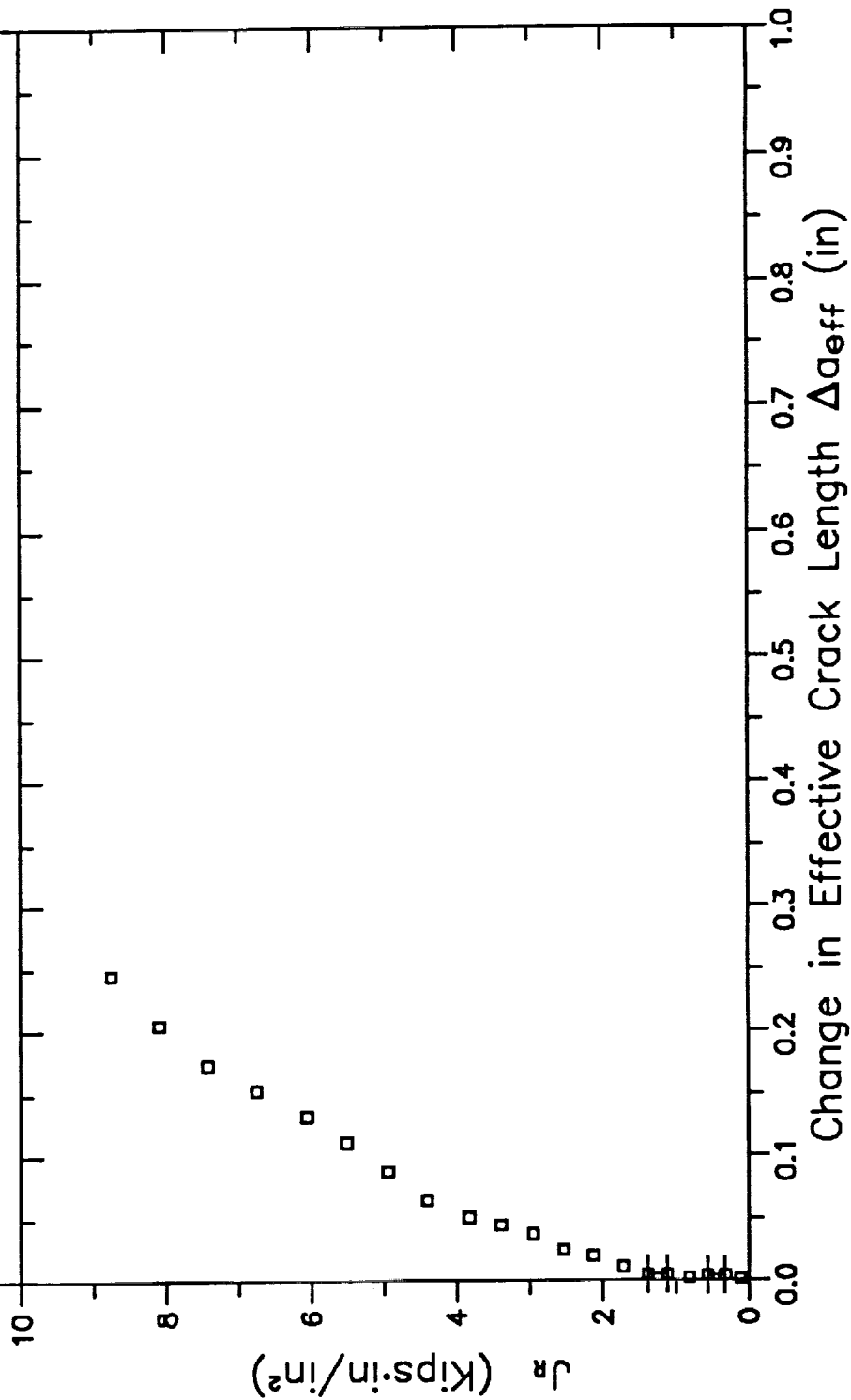
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)

Specimen Orientation: L-C

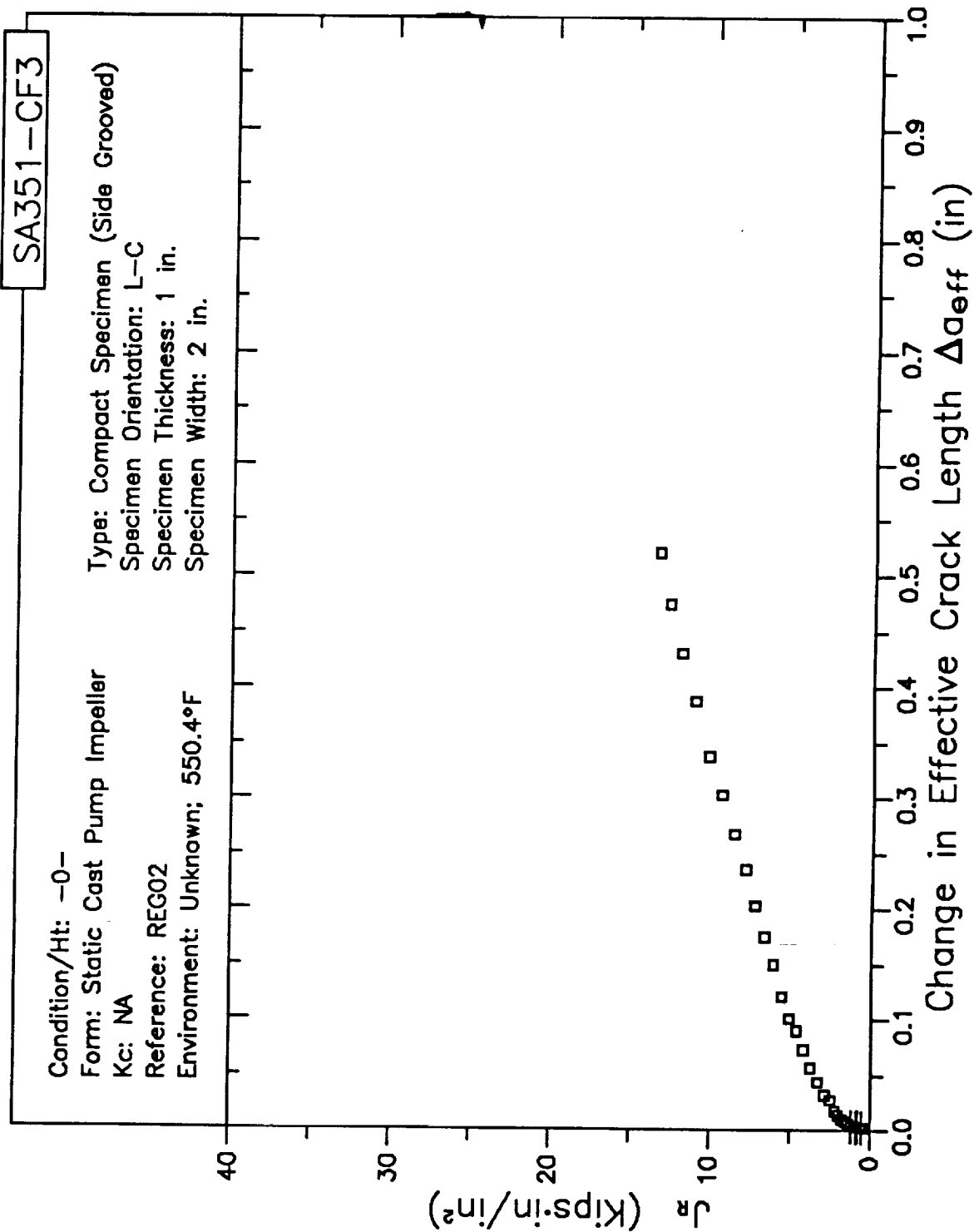
Specimen Thickness: 1 in.

Specimen Width: 2 in.



A3-60

# RESISTANCE CURVE



# RESISTANCE CURVE

SA351-CF3

Condition/Ht: -0-

Form: Slab (Cast Flat) (3 in. thick)

Type: Compact Specimen (Side Grooved)

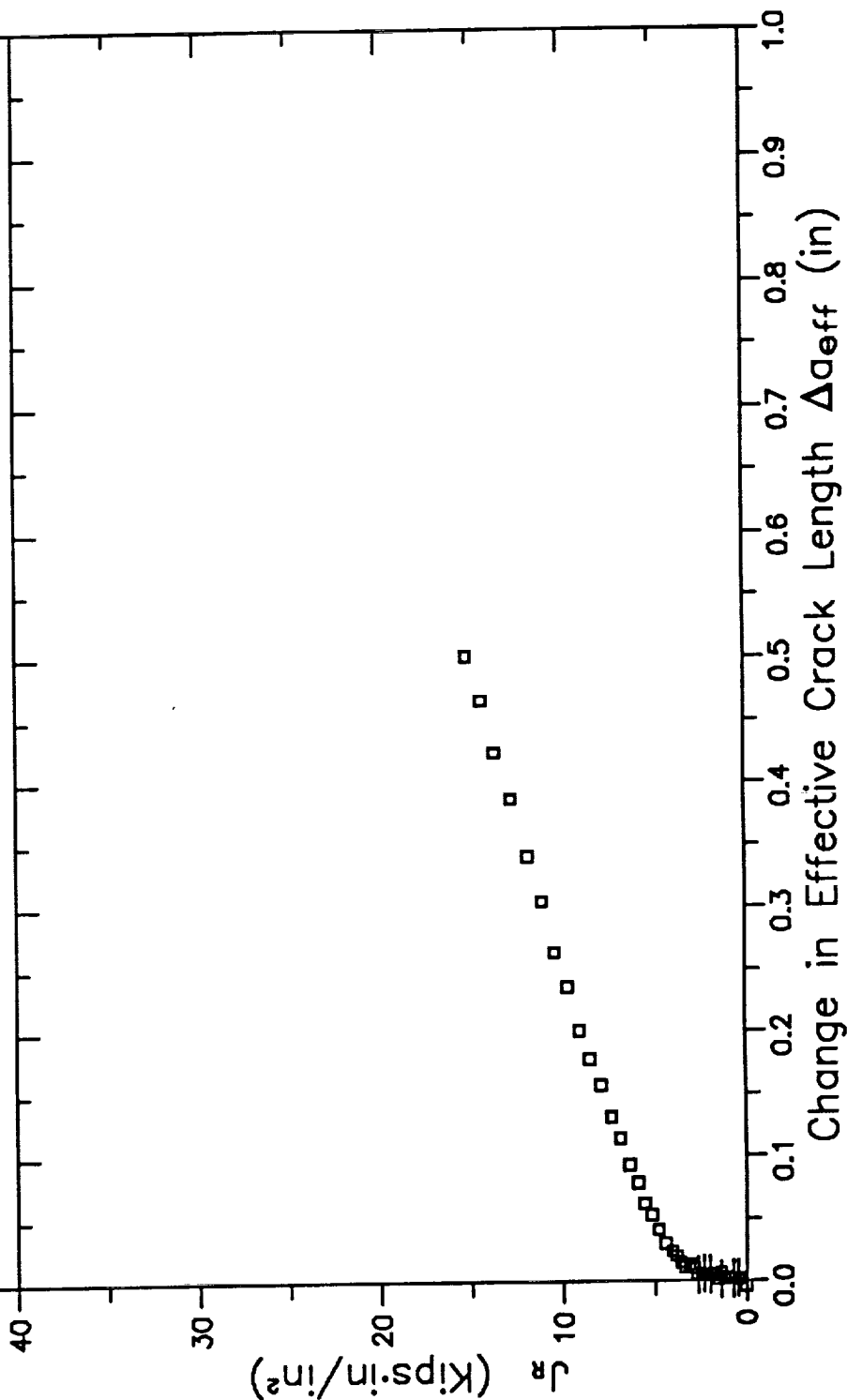
Kc: NA

Reference: REG02

Specimen Thickness: 1 in.

Environment: Unknown; 554°F

Specimen Width: 2 in.



# RESISTANCE CURVE

SA351-CF8

Condition/Ht: ANNEALED 3000 HOURS AT 662 F

Form: Slab (Cast Flat) (3 in. thick)

Type: Compact Specimen (Side Grooved)

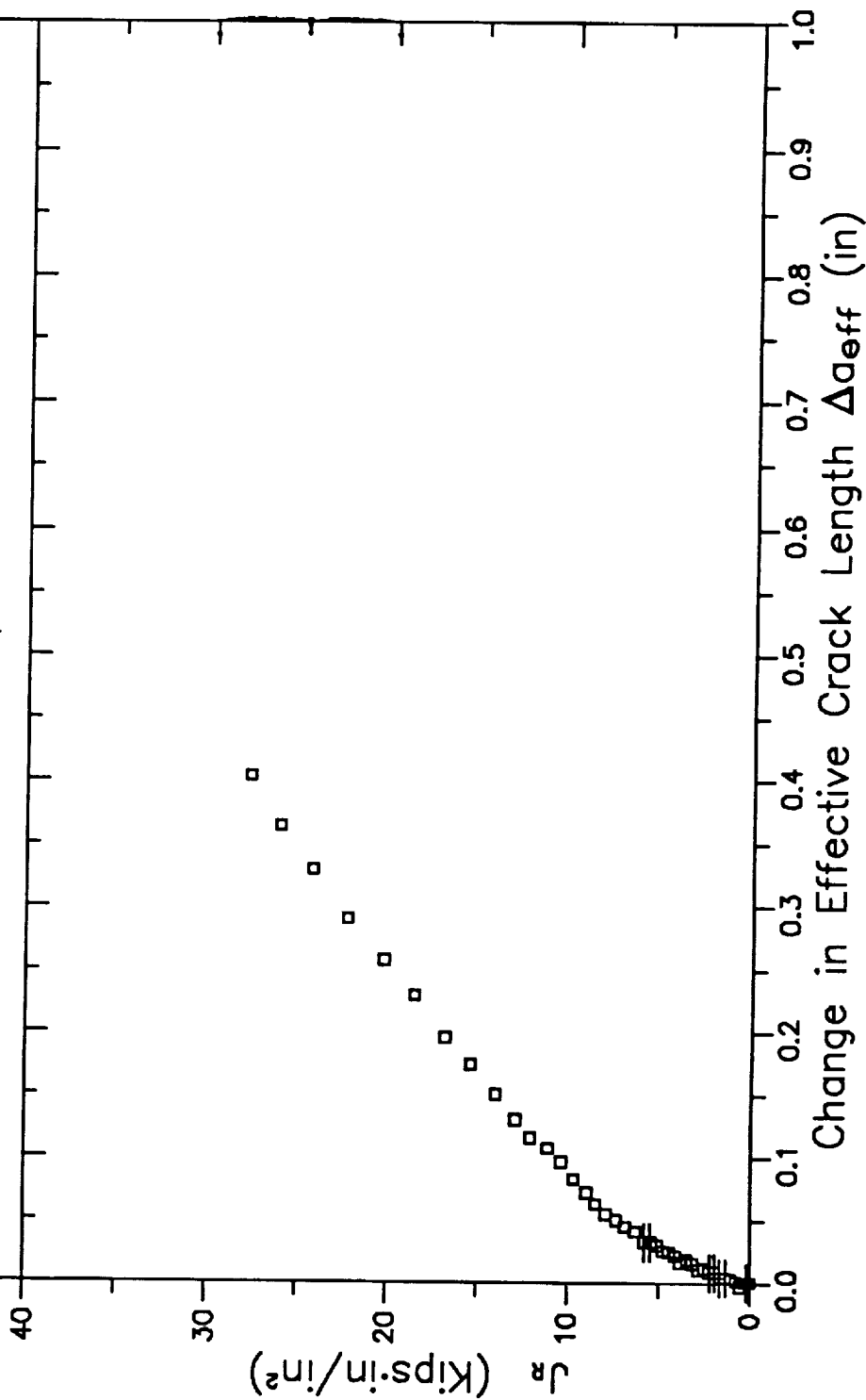
Kc: NA

Reference: REGO2

Specimen Thickness: 1 in.

Environment: Unknown; 77°F

Specimen Width: 2 in.



# RESISTANCE CURVE

SA351-CF8

Condition/Ht: ANNEALED 3000 HOURS AT 662 F

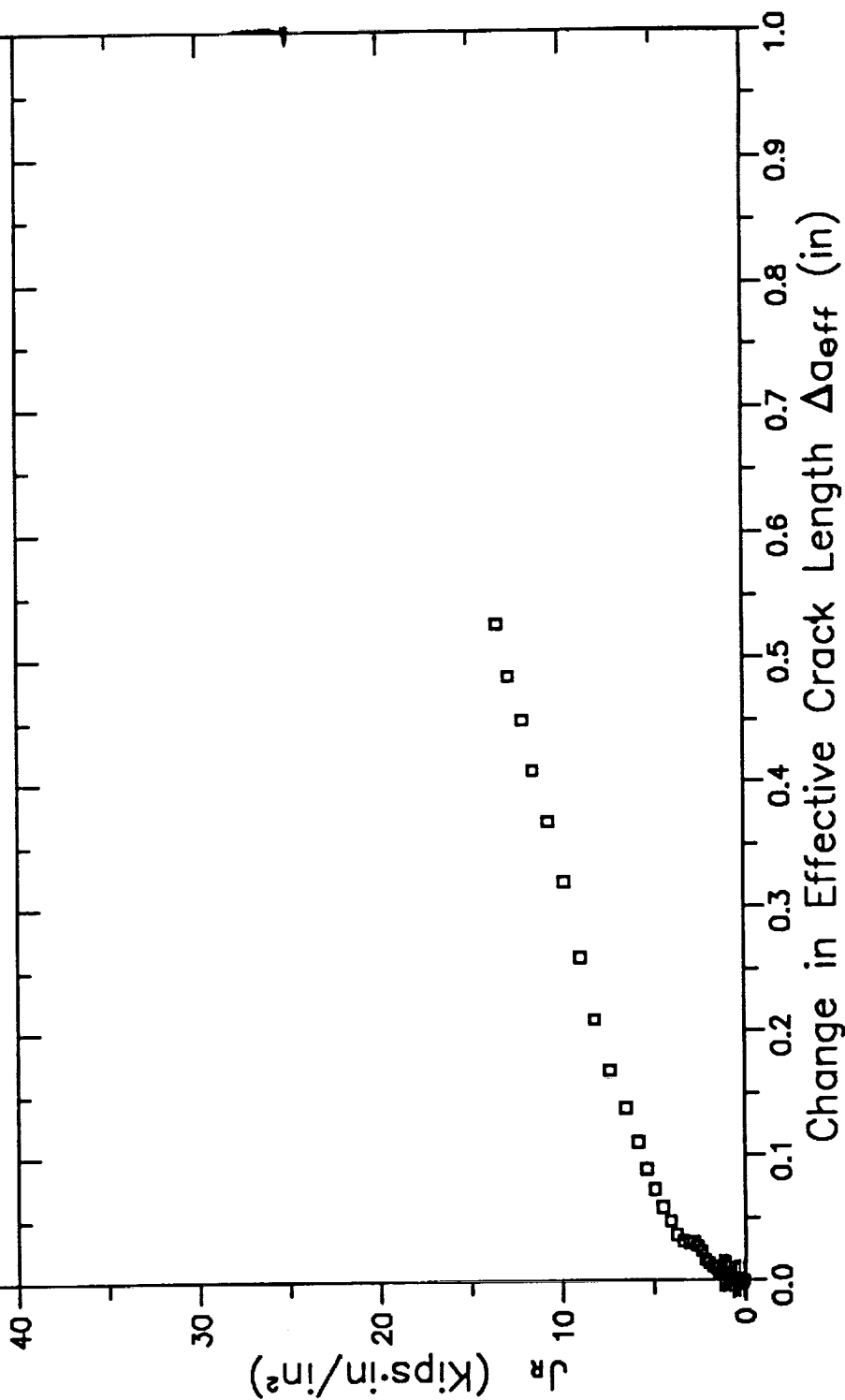
Form: Slab (Cast Flat) (3 in. thick) Type: Compact Specimen (Side Grooved)

Kc: NA

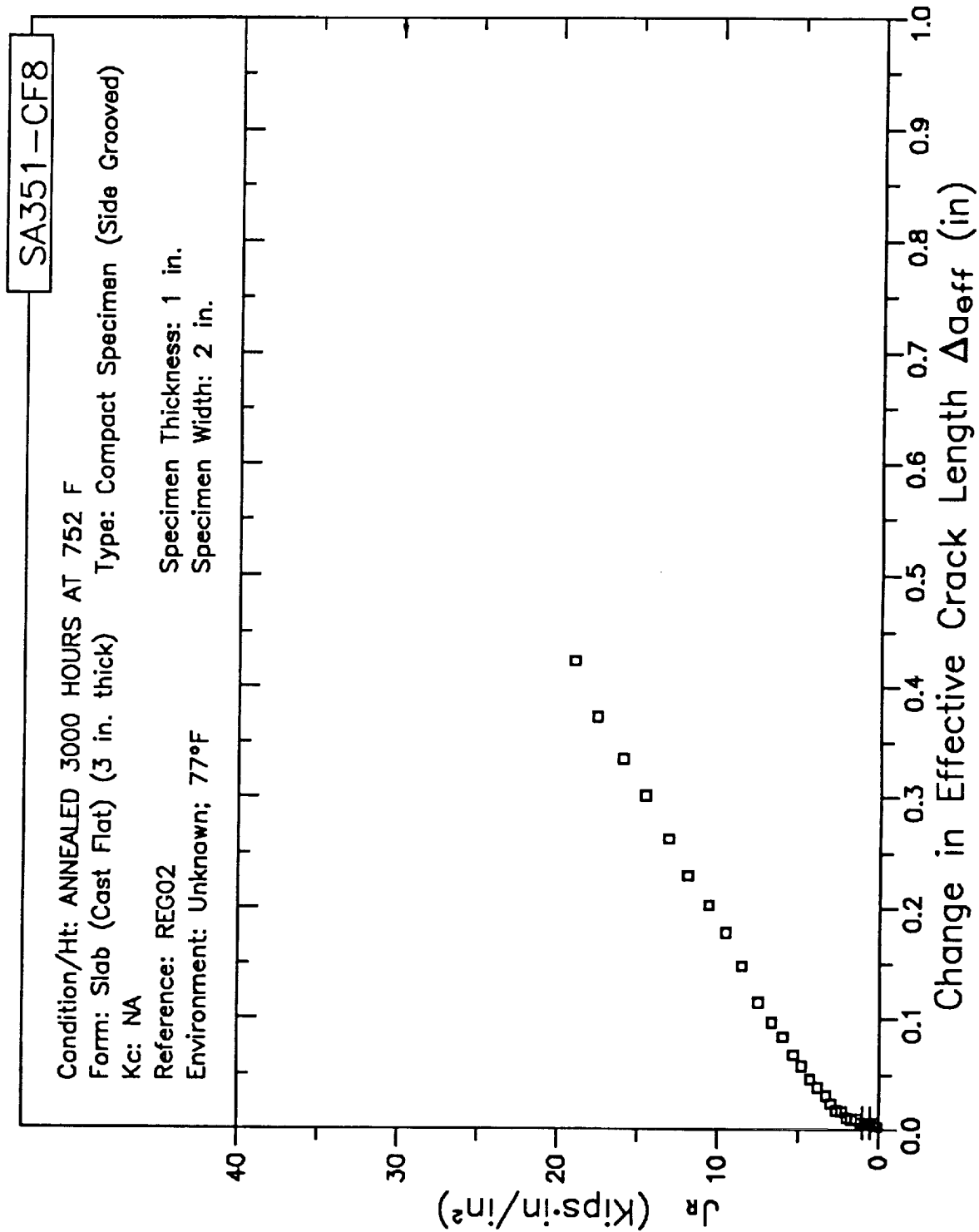
Reference: REG02

Specimen Thickness: 1 in.

Environment: Unknown; 554°F Specimen Width: 2 in.



# RESISTANCE CURVE



# RESISTANCE CURVE

SA351-CF8

Condition/Ht: ANNEALED 3000 HOURS AT 752 F

Form: Slab (Cast Flat) (3 in. thick)      Type: Compact Specimen (Side Grooved)

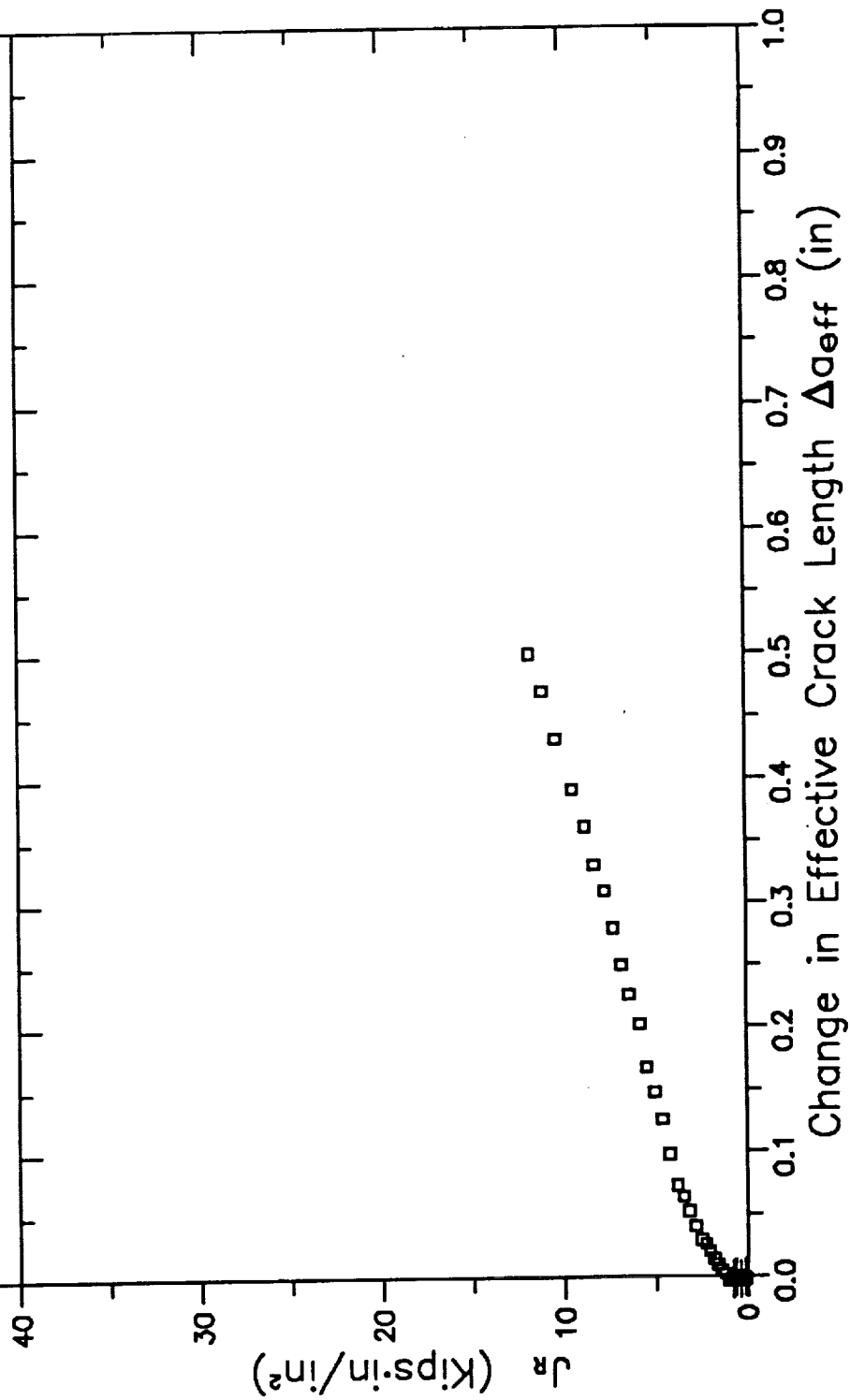
Kc: NA

Reference: REG02

Specimen Thickness: 1 in.

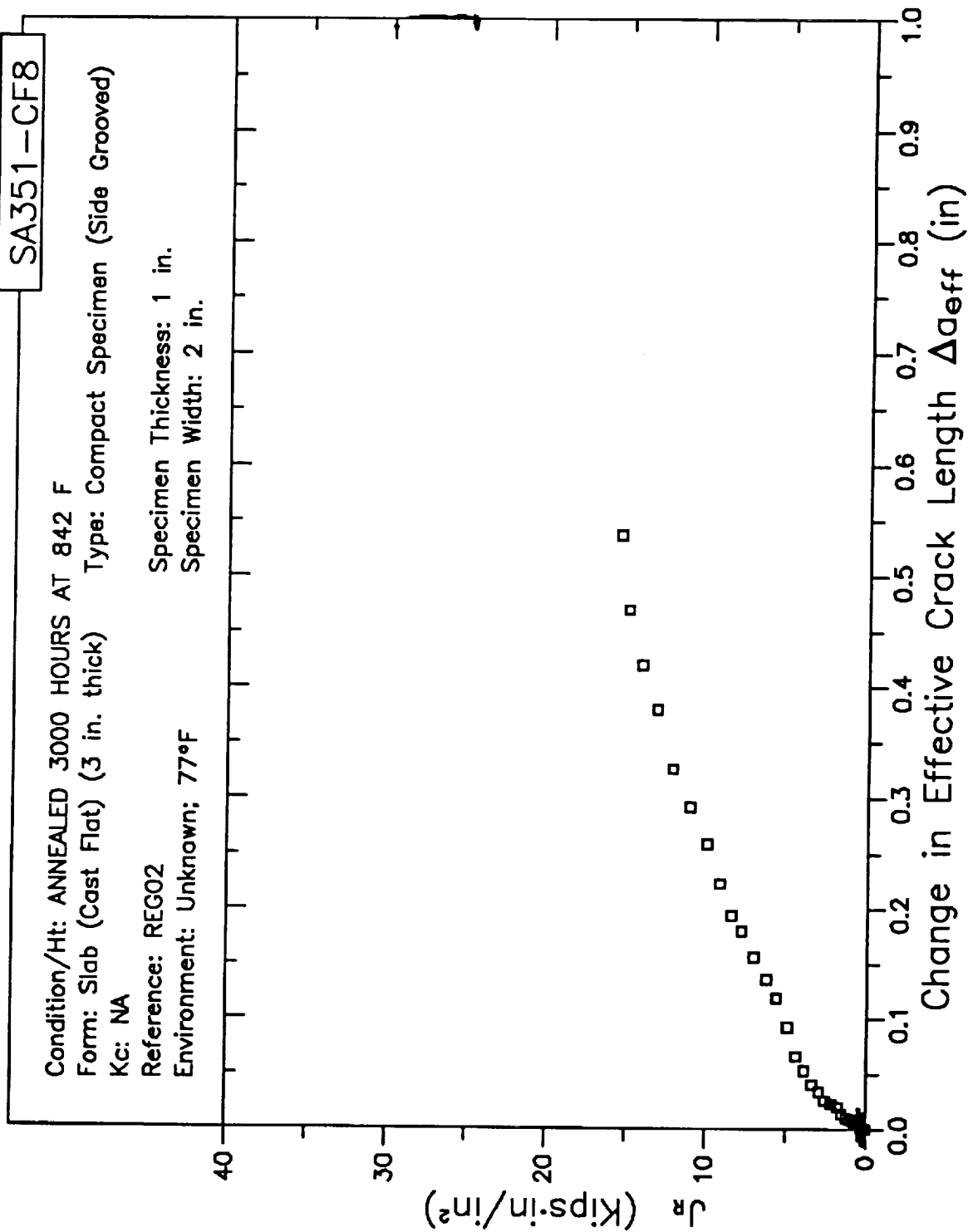
Environment: Unknown; 554°F

Specimen Width: 2 in.





# RESISTANCE CURVE



# RESISTANCE CURVE

SA351-CF8

Condition/Ht: ANNEALED 3000 HOURS AT 842 F

Form: Slab (Cast Flat) (3 in. thick)      Type: Compact Specimen (Side Grooved)

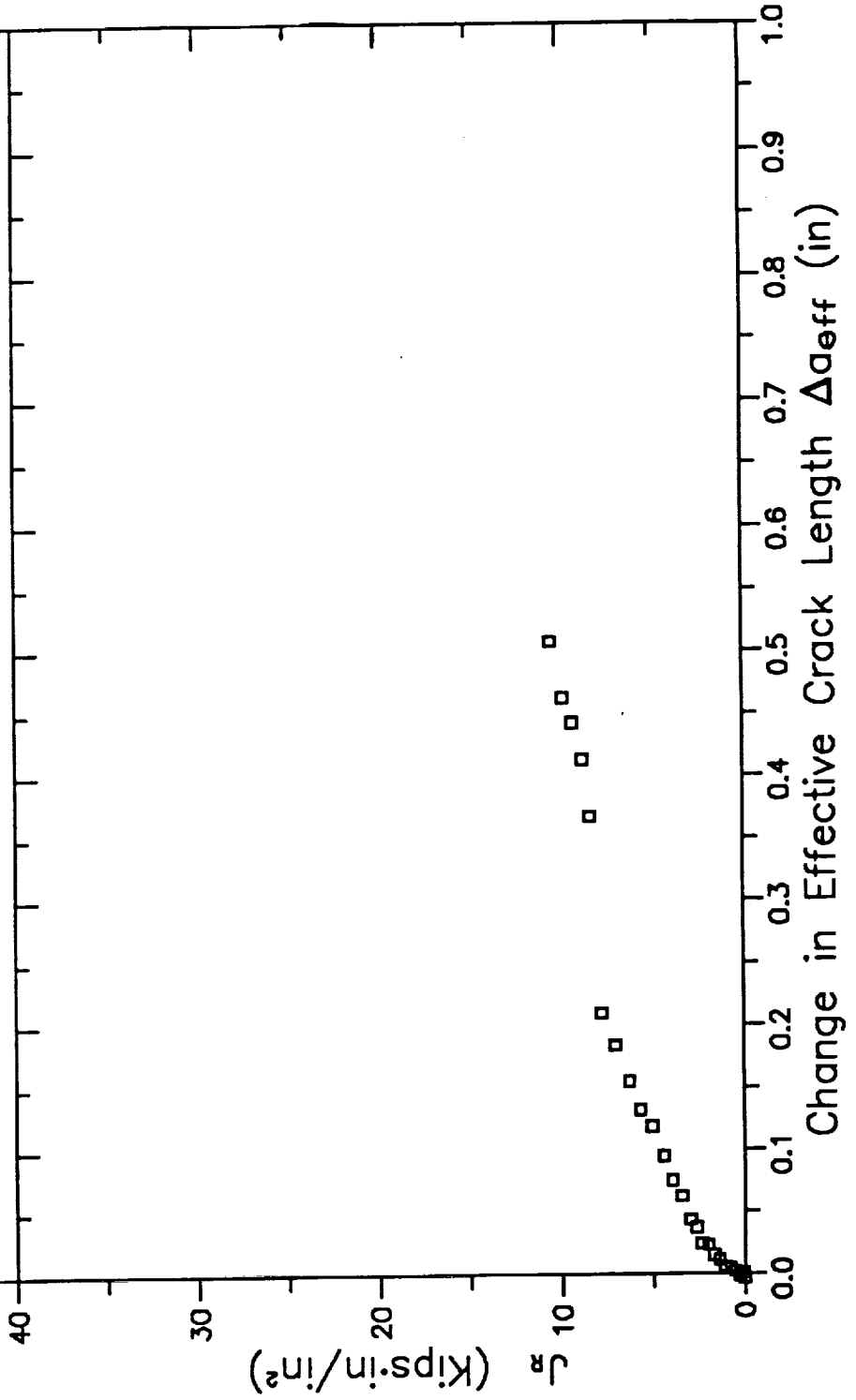
Kc: NA

Reference: REG02

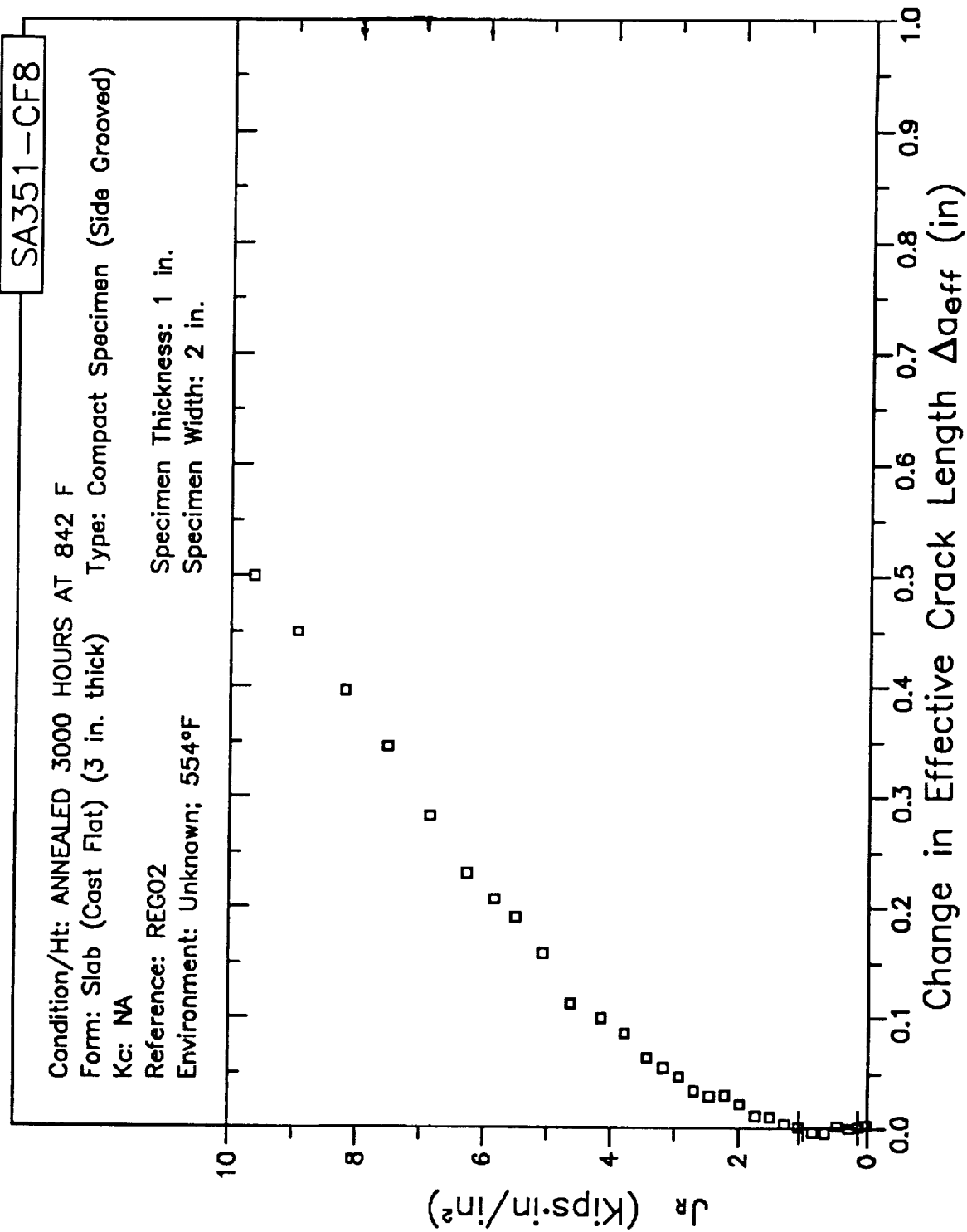
Specimen Thickness: 1 in.

Environment: Unknown; 77°F

Specimen Width: 2 in.



# RESISTANCE CURVE



# RESISTANCE CURVE

SA351-CF8

Condition/Ht: WATER QUENCHED FROM 1949-2048 F

Form: Ring (2.25 in. thick)

Kc: NA

Reference: REG02

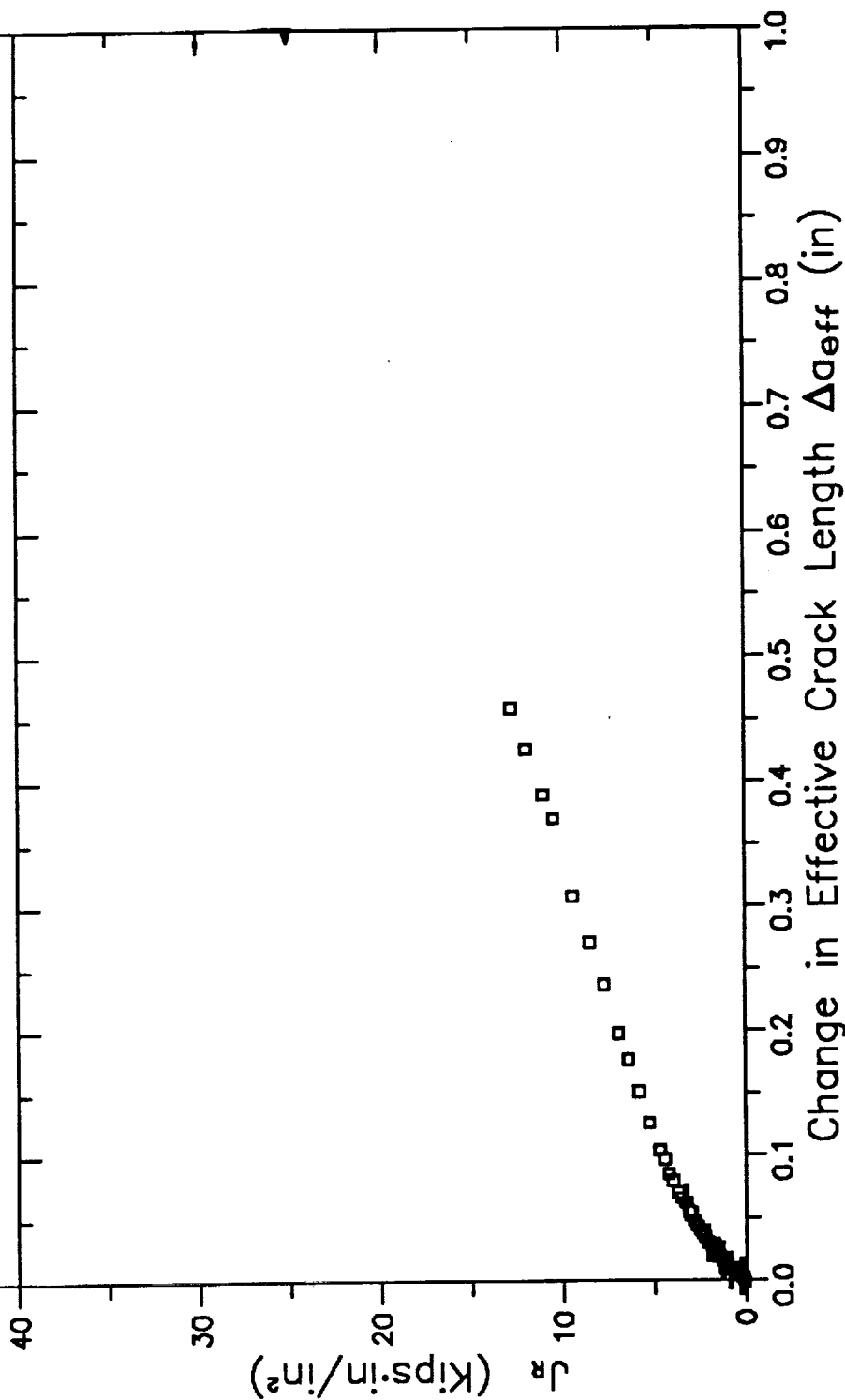
Environment: Unknown; 73.4°F

Type: Compact Specimen (Side Grooved)

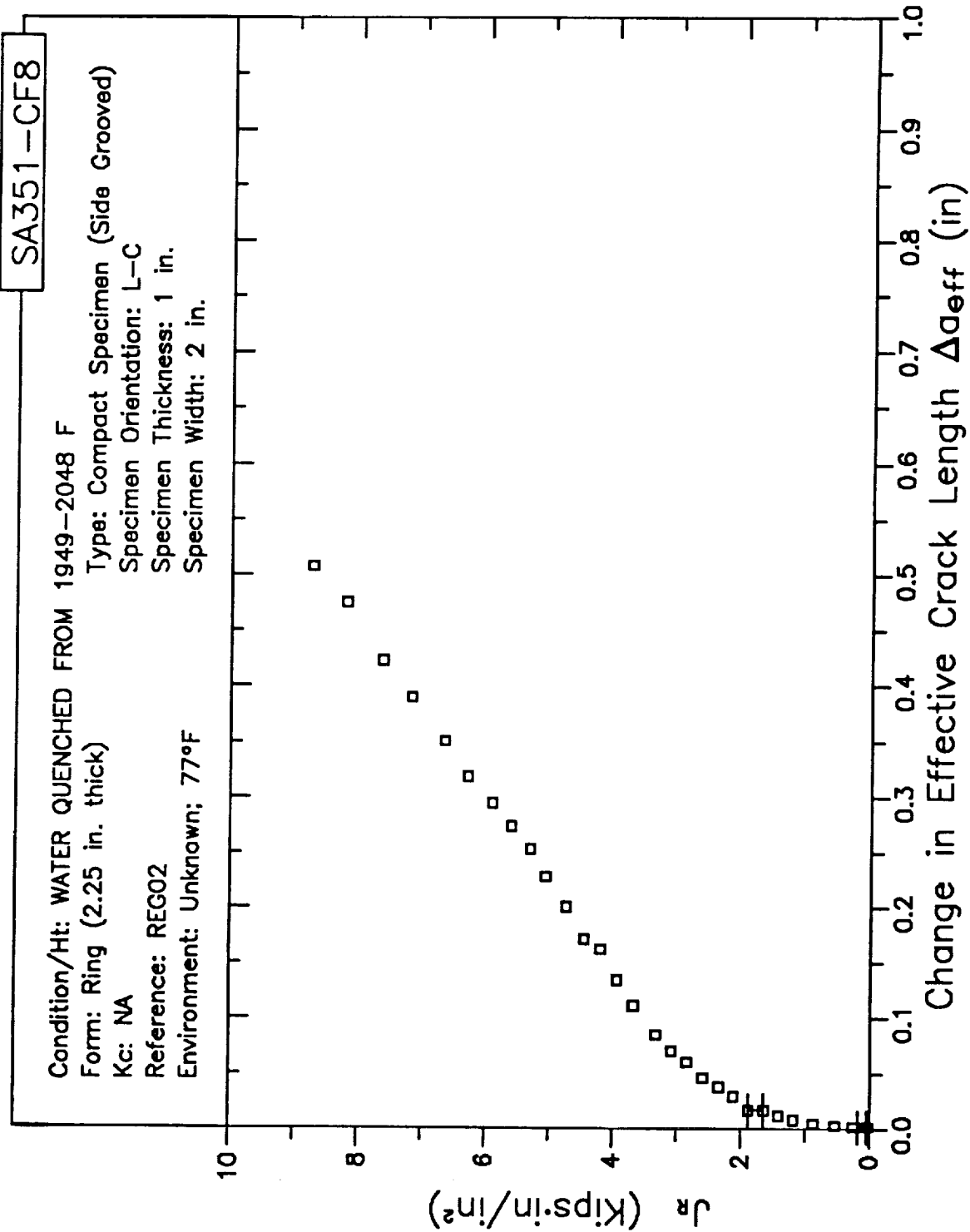
Specimen Orientation: L-C

Specimen Thickness: 1 in.

Specimen Width: 2 in.



# RESISTANCE CURVE



# RESISTANCE CURVE

SA351-CF8

Condition/Ht: WATER QUENCHED FROM 1949-2048 F

Form: Ring (2.25 in. thick)

Kc: NA

Reference: REG02

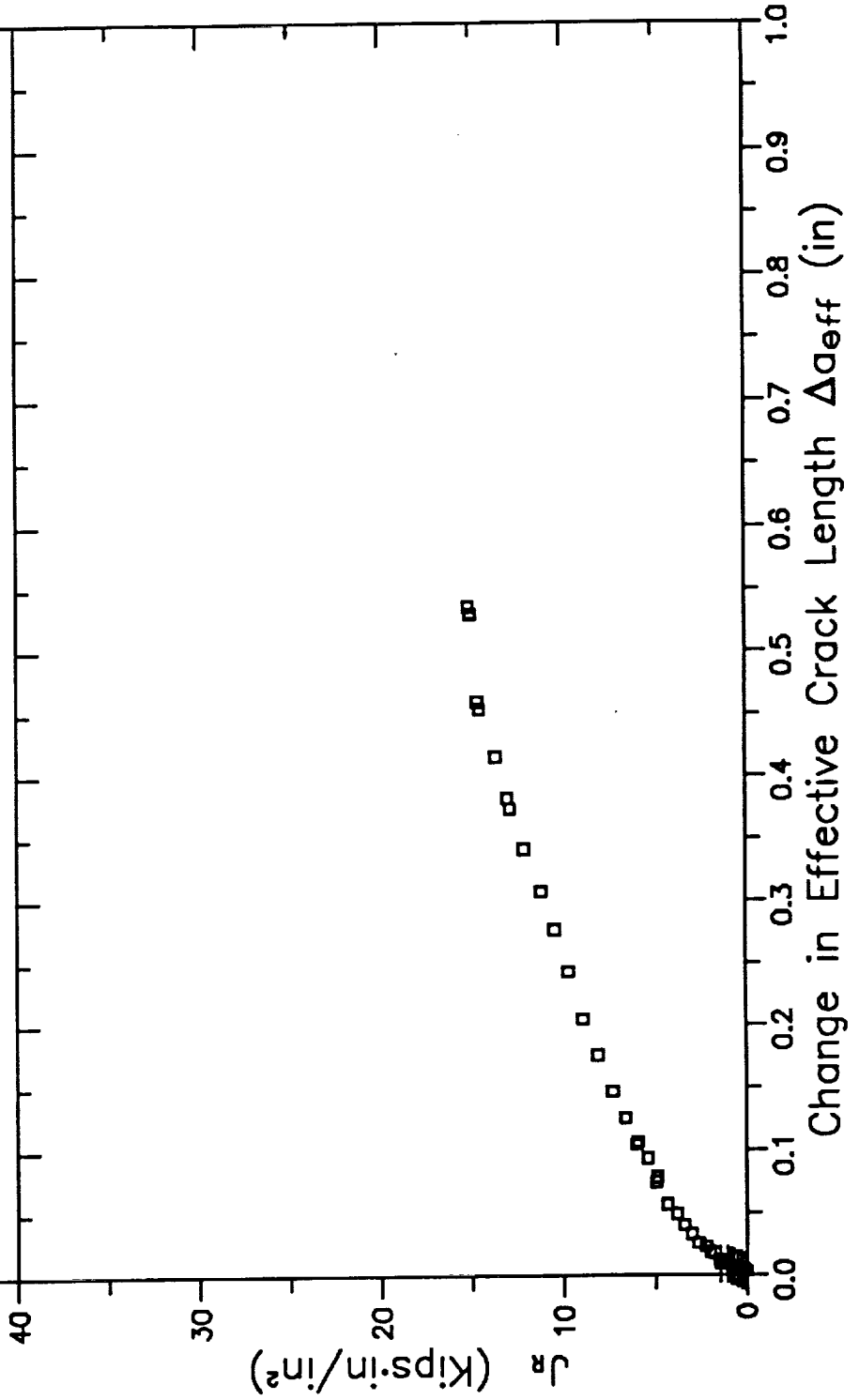
Environment: Unknown; 77°F

Type: Compact Specimen (Side Grooved)

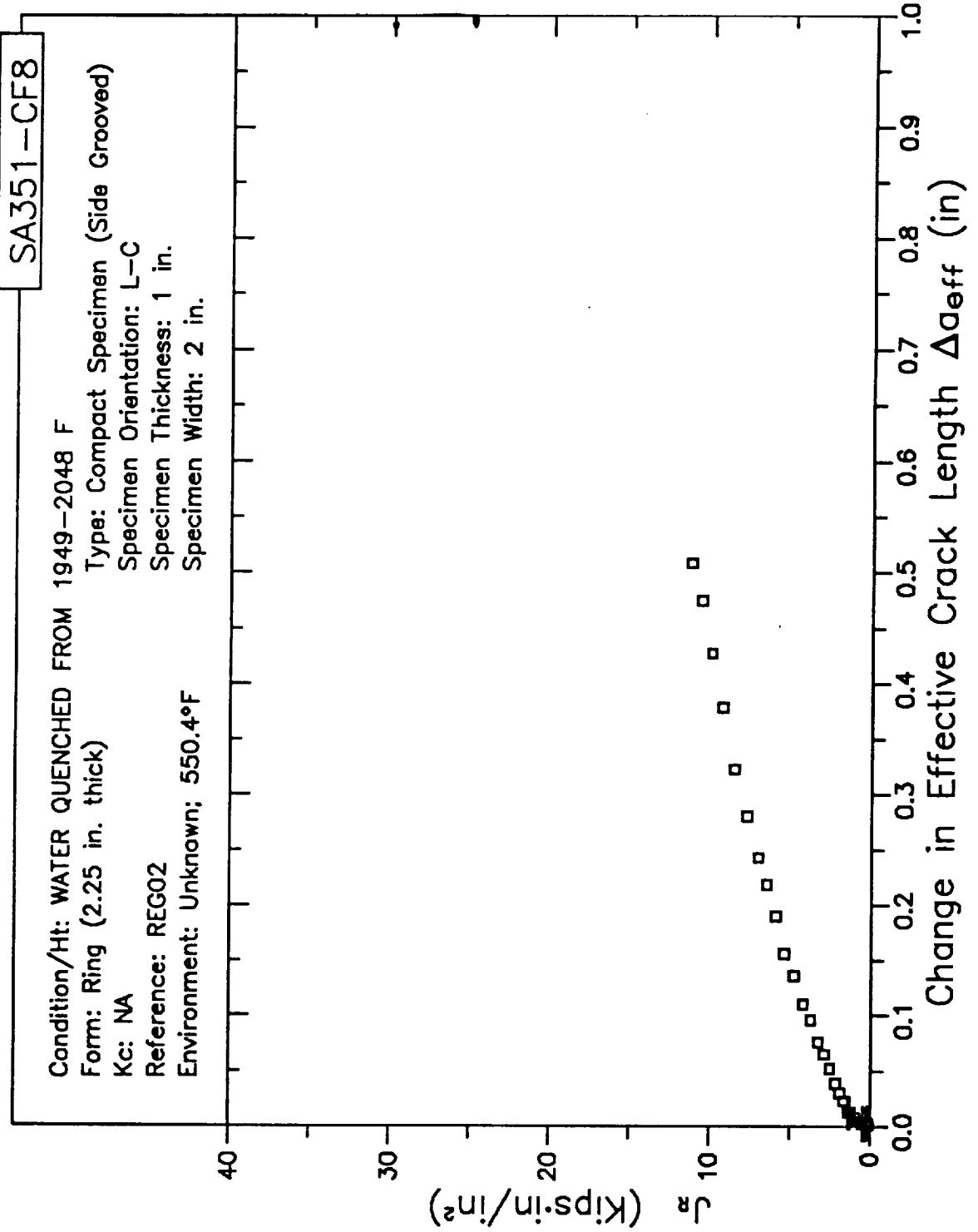
Specimen Orientation: C-L

Specimen Thickness: 1 in.

Specimen Width: 2 in.



# RESISTANCE CURVE



# RESISTANCE CURVE

SA351-CF8

Condition/Ht: WATER QUENCHED FROM 1949-2048 F

Form: Ring (2.25 in. thick)

Kc: NA

Reference: REG02

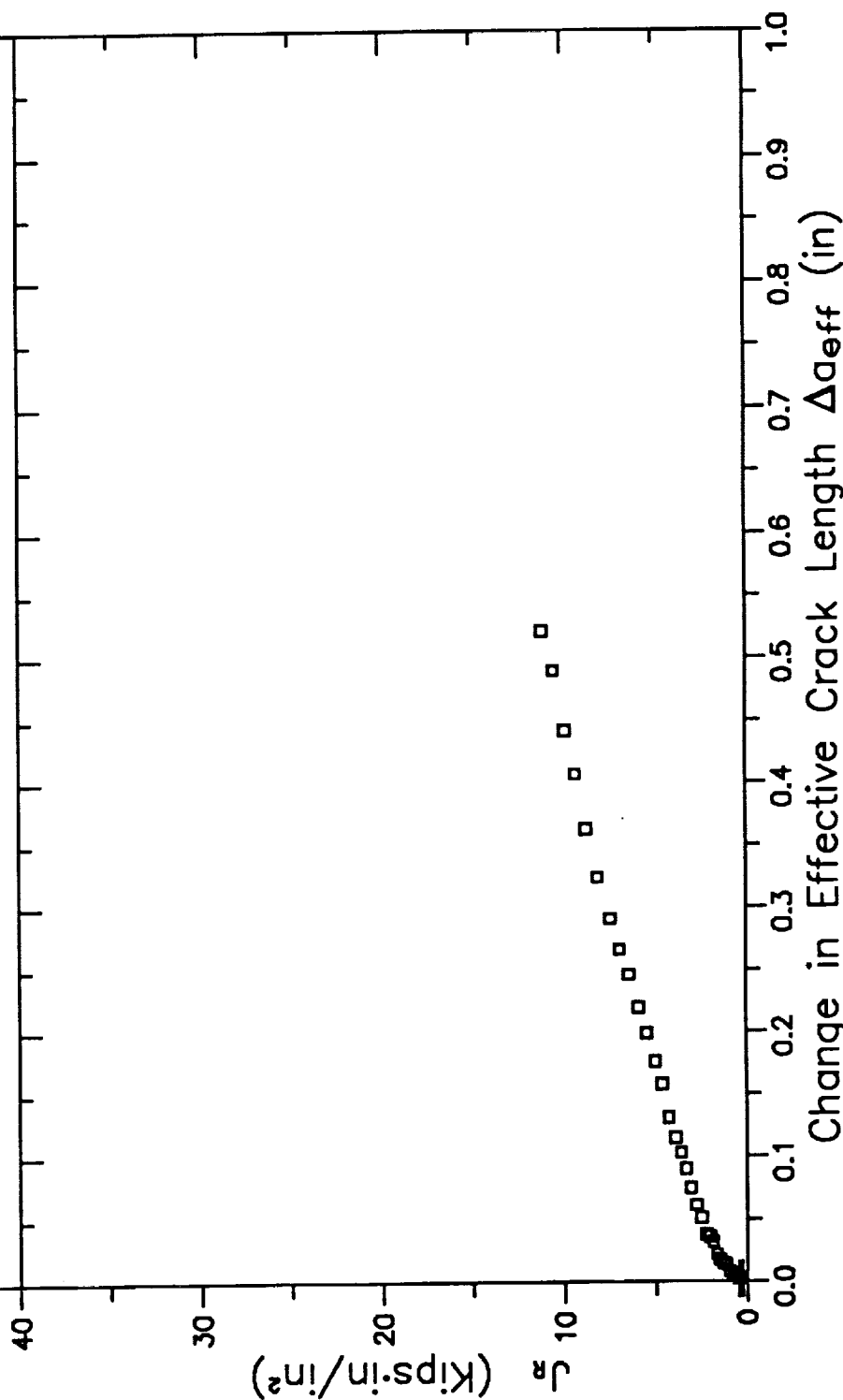
Environment: Unknown; 554°F

Type: Compact Specimen (Side Grooved)

Specimen Orientation: L-C

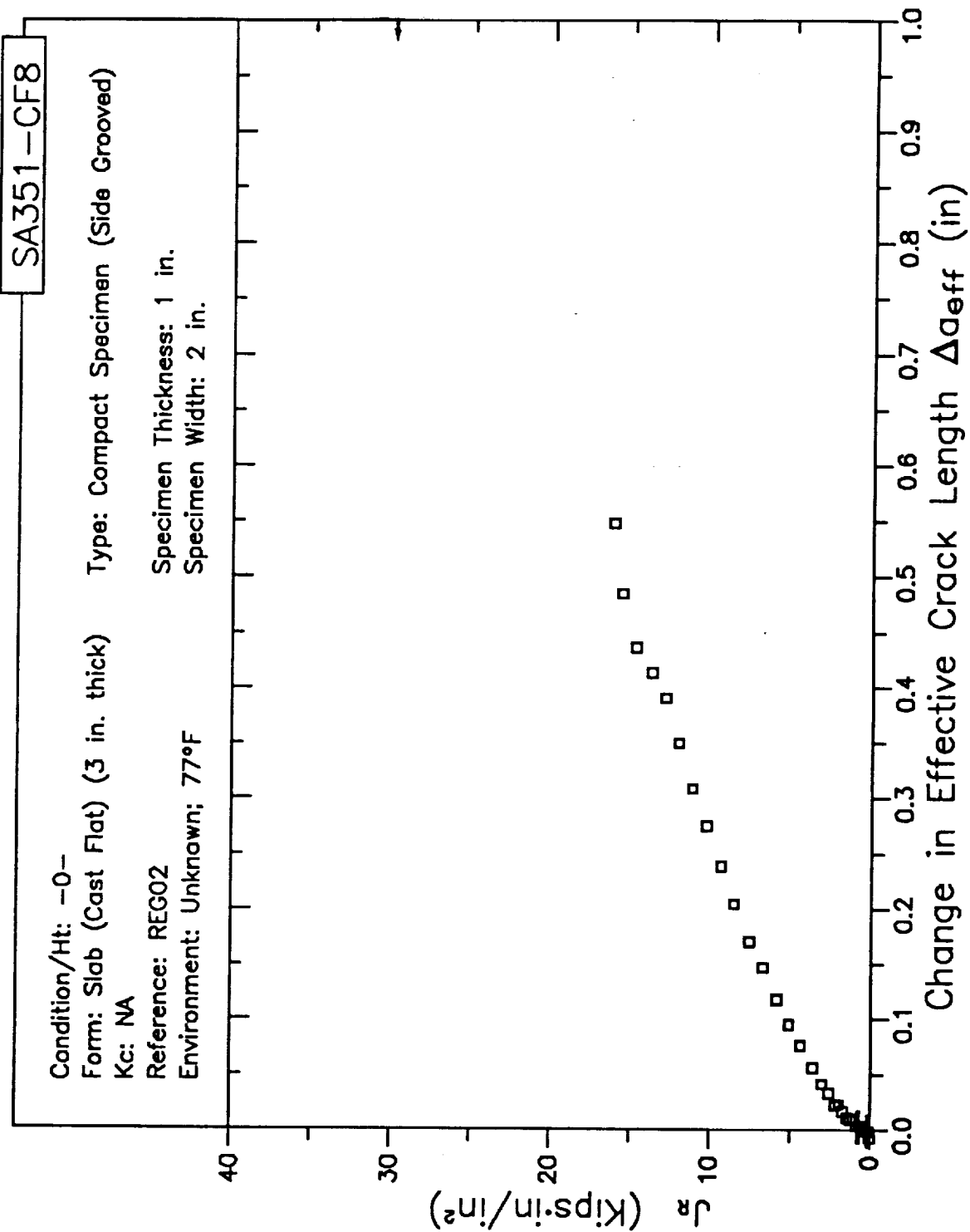
Specimen Thickness: 1 in.

Specimen Width: 2 in.





# RESISTANCE CURVE



# RESISTANCE CURVE

SA351-CF8

Condition/Ht: -0-

Form: Slab (Cast Flat) (3 in. thick)

Type: Compact Specimen (Side Grooved)

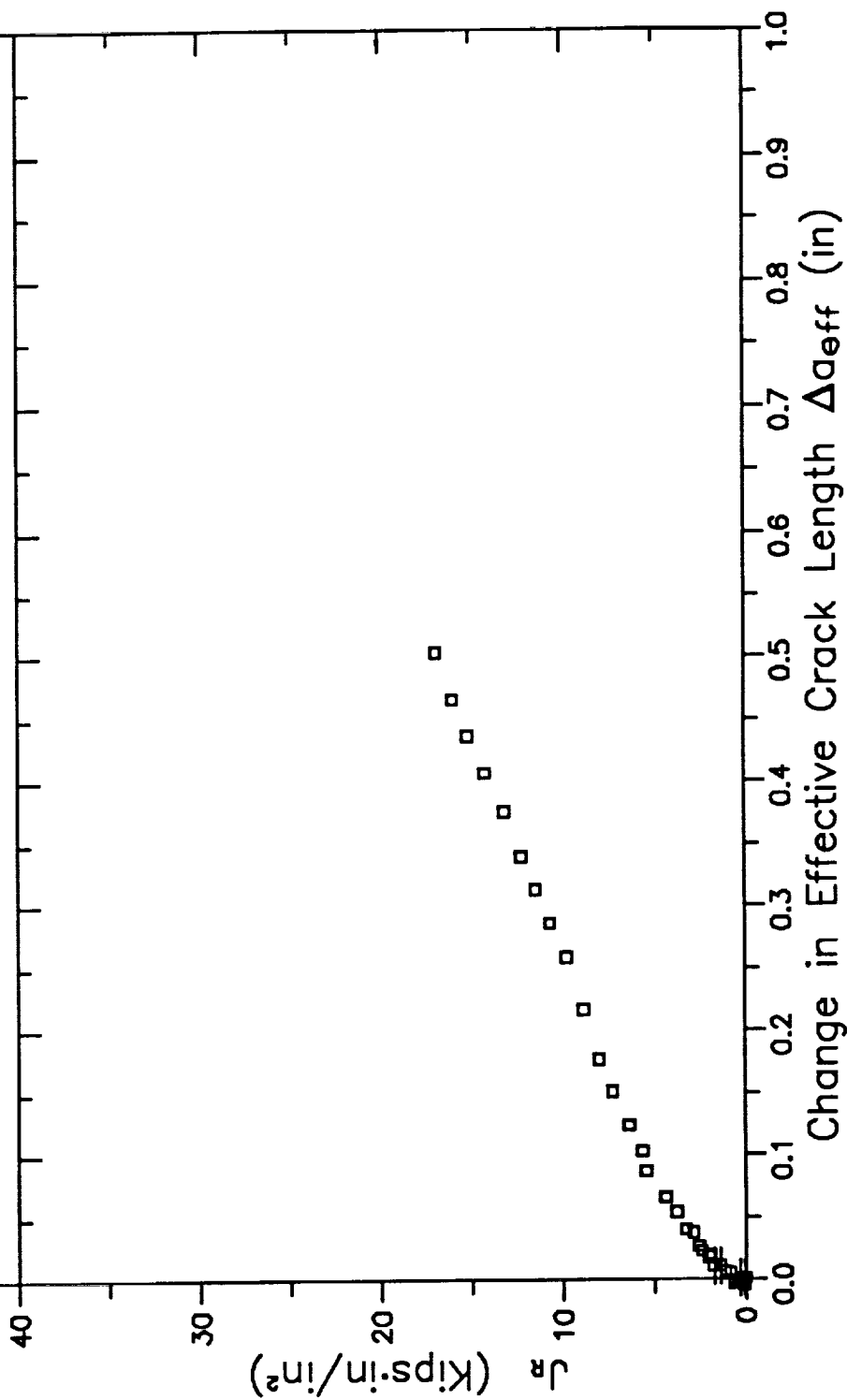
Kc: NA

Reference: REG02

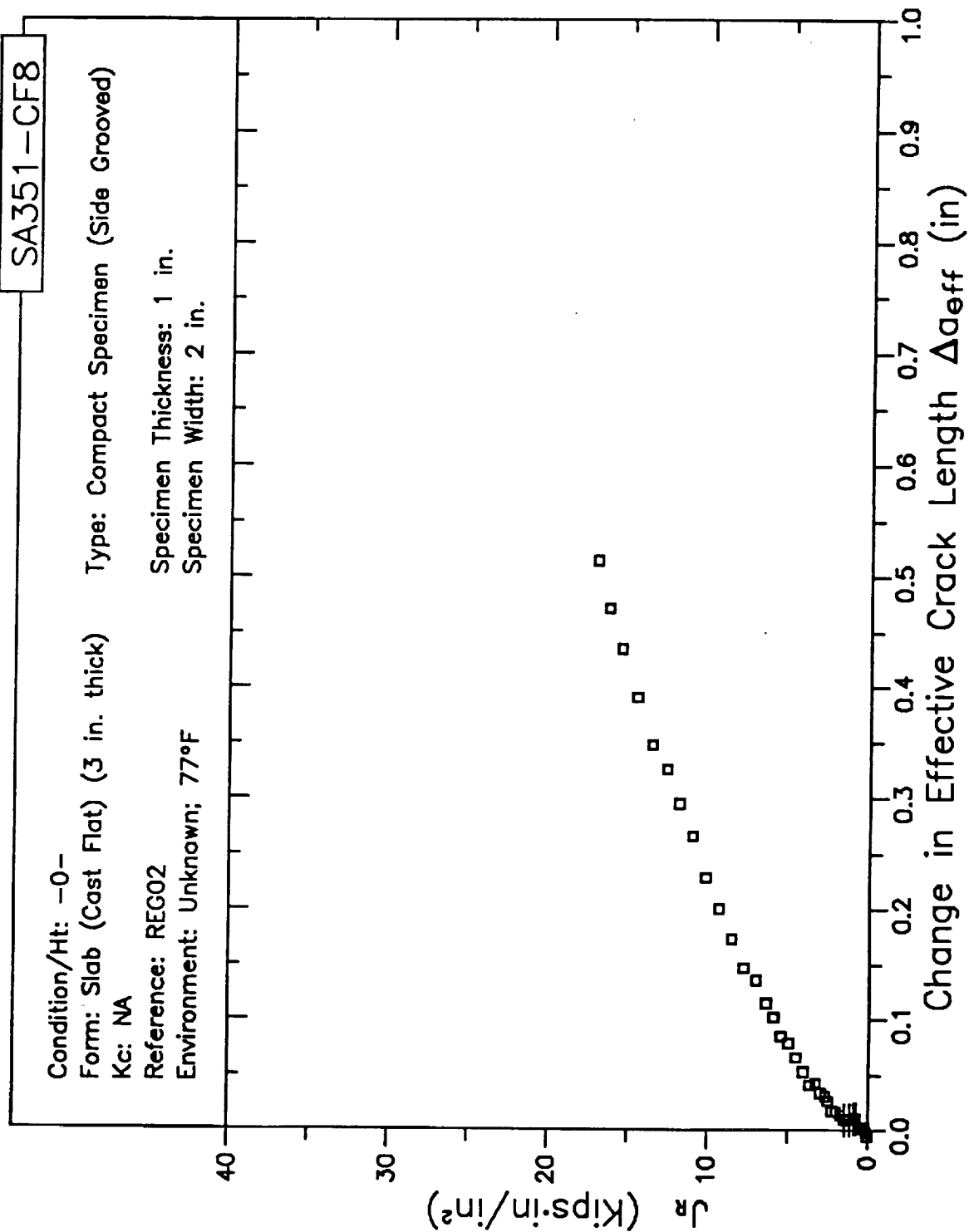
Specimen Thickness: 1 in.

Environment: Unknown; 77°F

Specimen Width: 2 in.



# RESISTANCE CURVE



# RESISTANCE CURVE

SA351-CF8

Condition/Ht: -0-

Form: Slab (Cast Flat) (3 in. thick)

Type: Compact Specimen (Side Grooved)

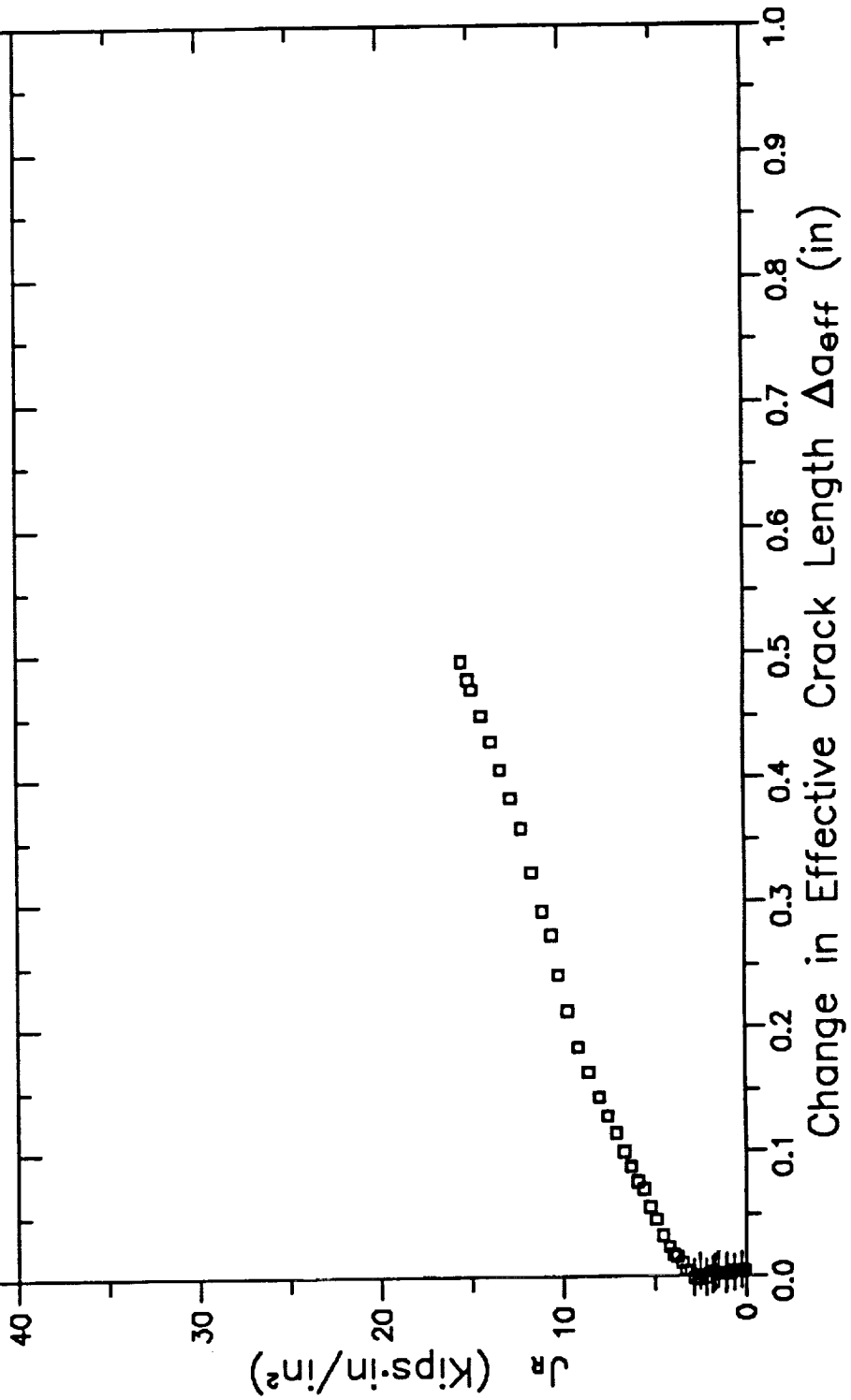
Kc: NA

Reference: REG02

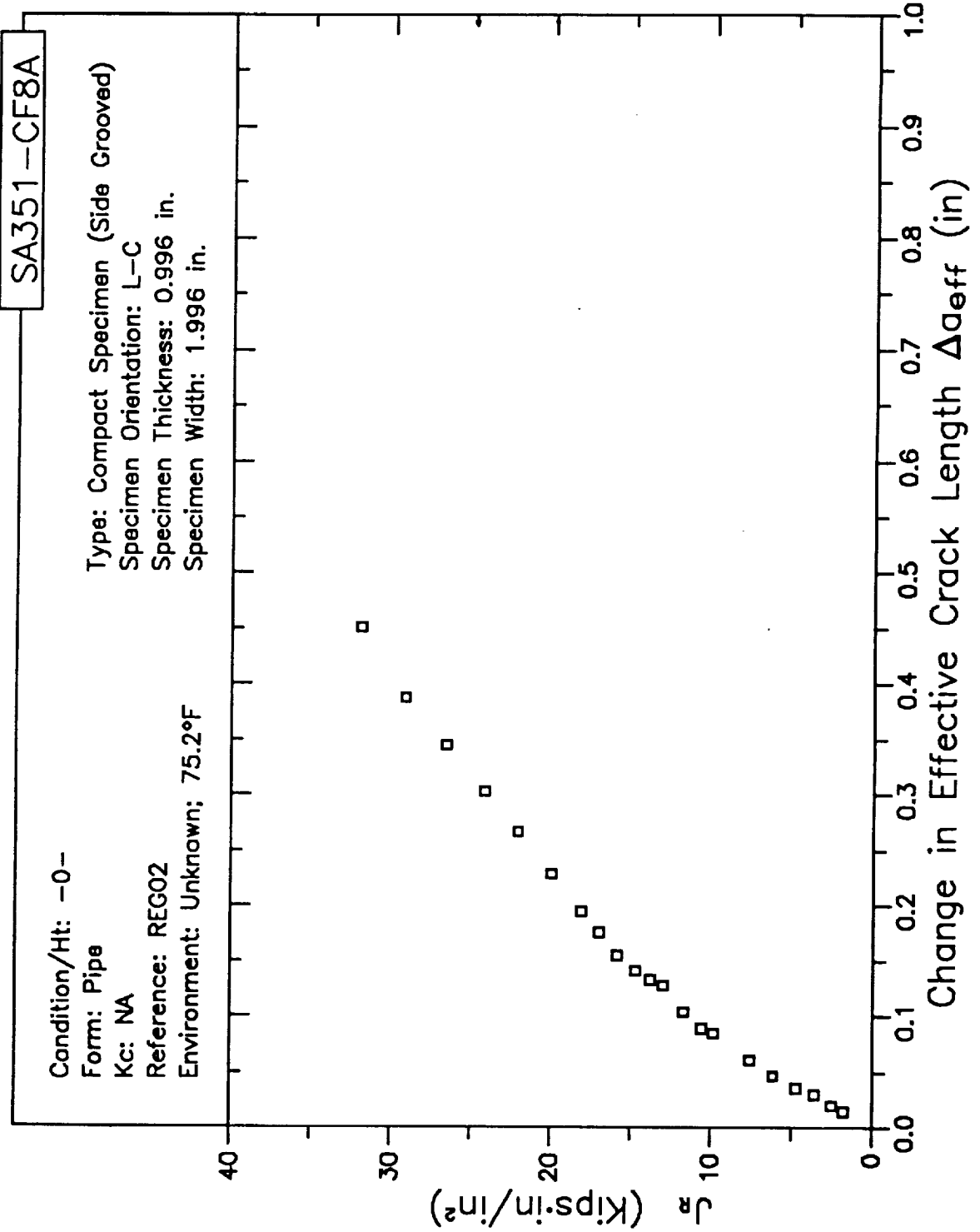
Specimen Thickness: 1 in.

Environment: Unknown; 554°F

Specimen Width: 2 in.



# RESISTANCE CURVE

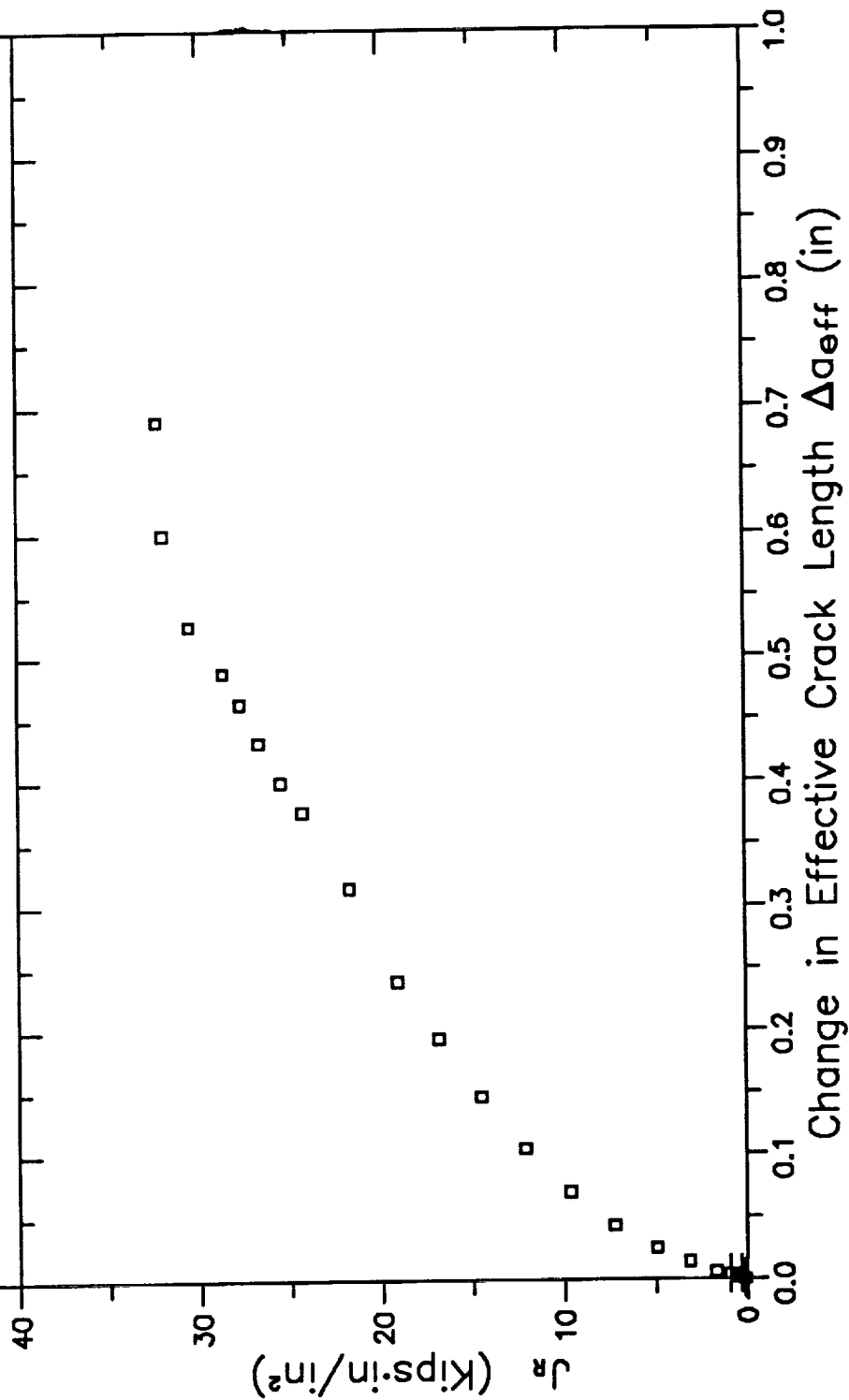


# RESISTANCE CURVE

SA351-CF8A

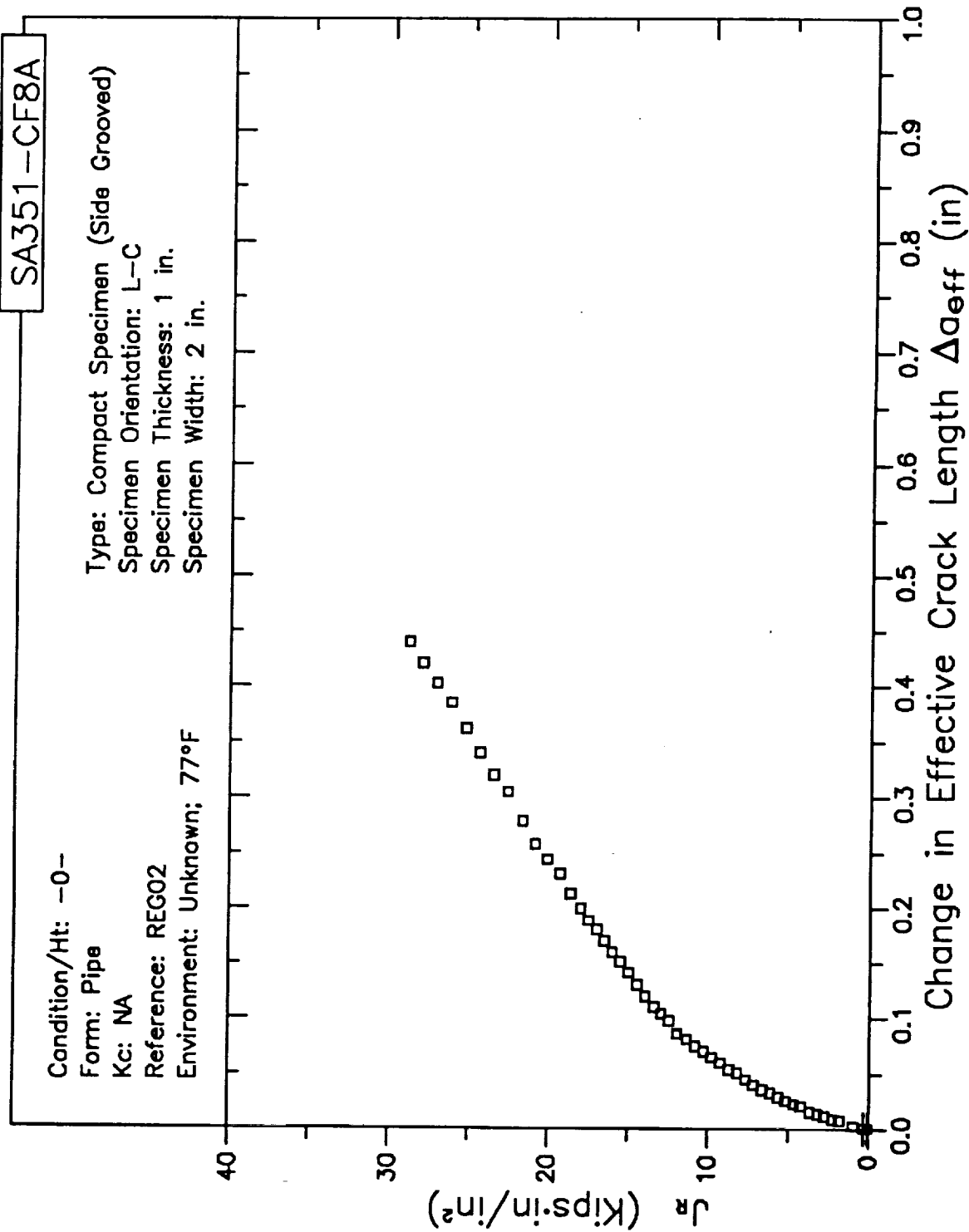
Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG02  
Environment: Unknown; 75.2°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: C-L  
Specimen Thickness: 1 in.  
Specimen Width: 2 in.



A3-80

# RESISTANCE CURVE

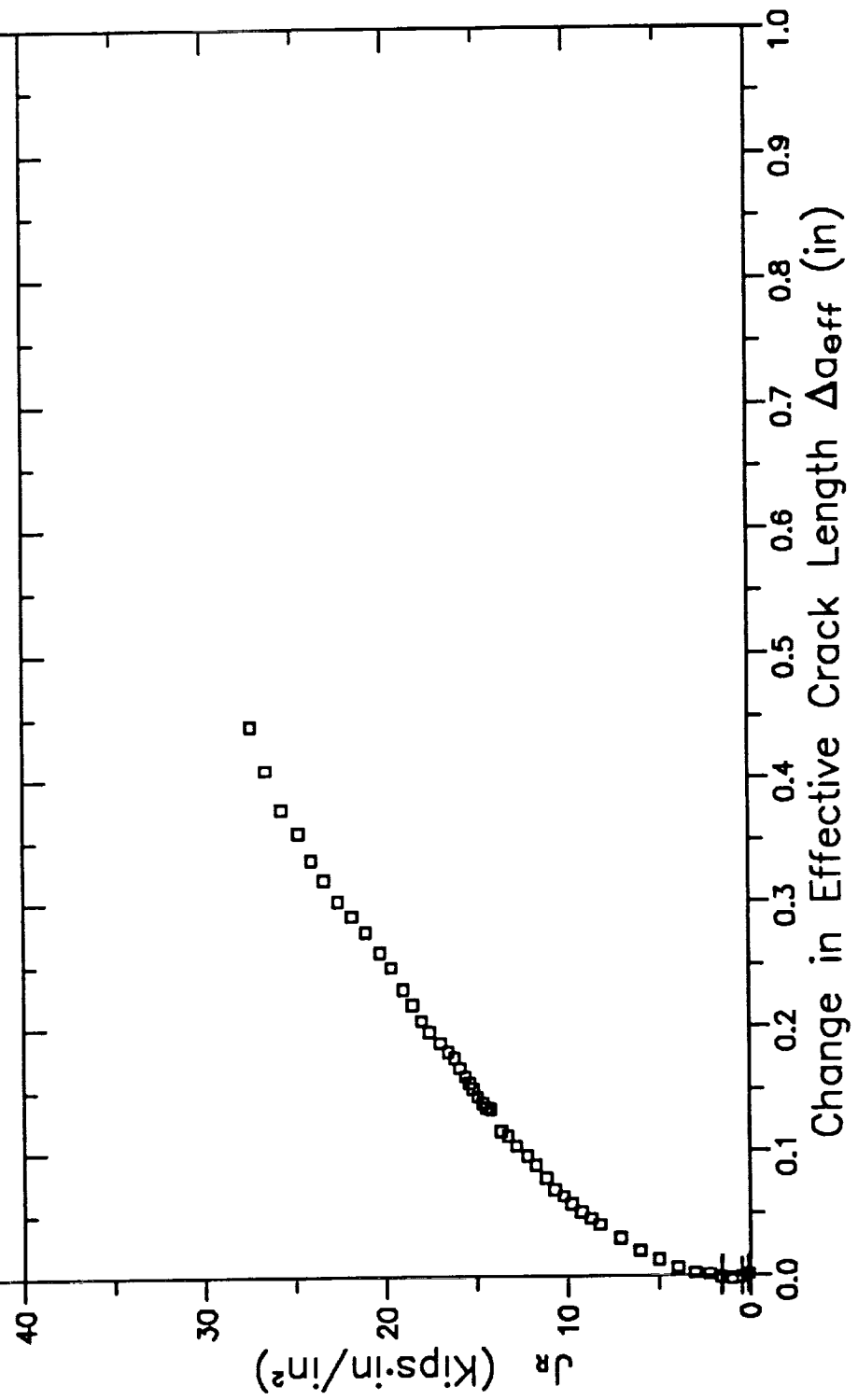


# RESISTANCE CURVE

SA351-CF8A

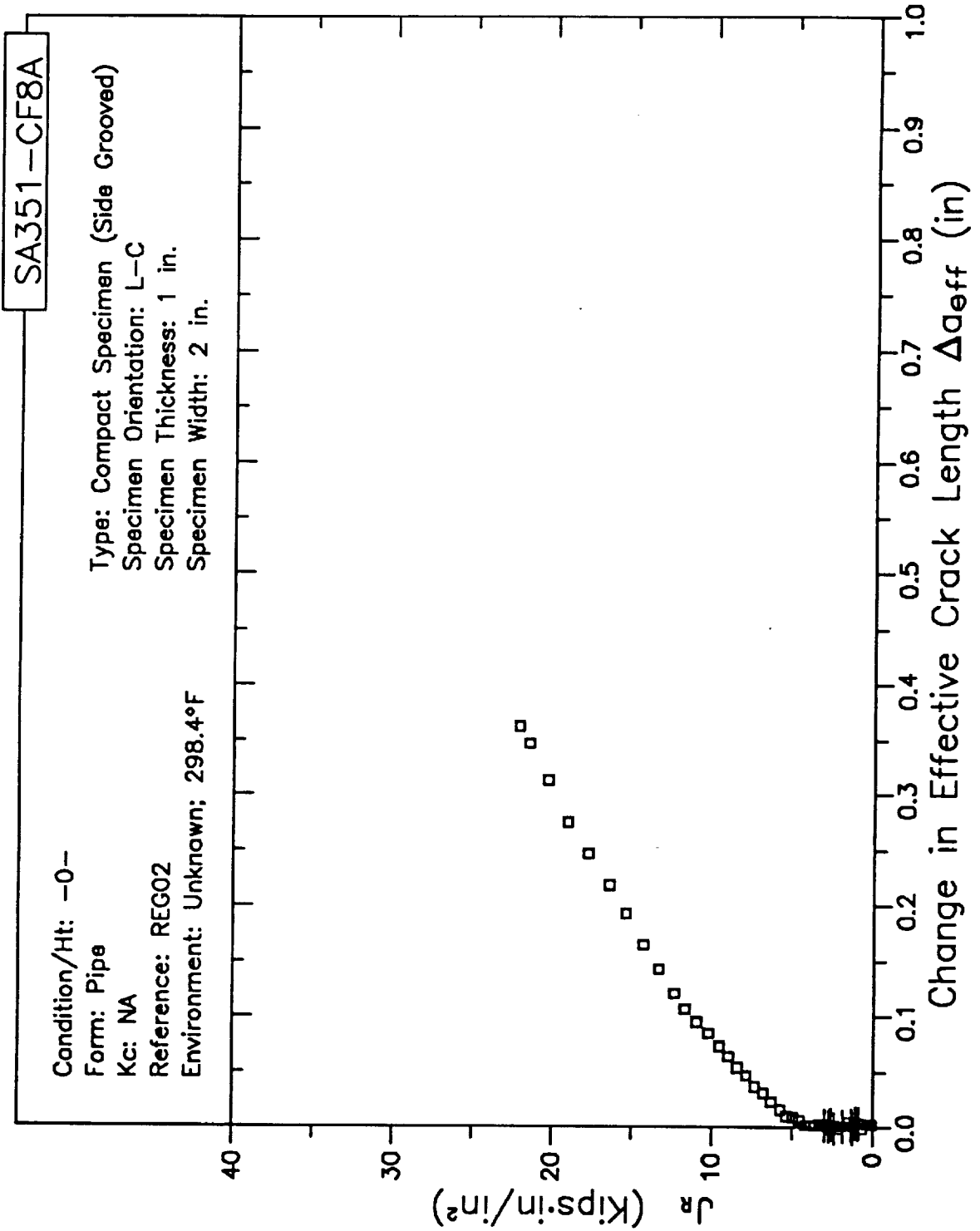
Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG02  
Environment: Unknown; 77°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: C-L  
Specimen Thickness: 1 in.  
Specimen Width: 2 in.





# RESISTANCE CURVE



# RESISTANCE CURVE

SA351-CF8A

Condition/Ht: -0-

Form: Pipe

Kc: NA

Reference: REG02

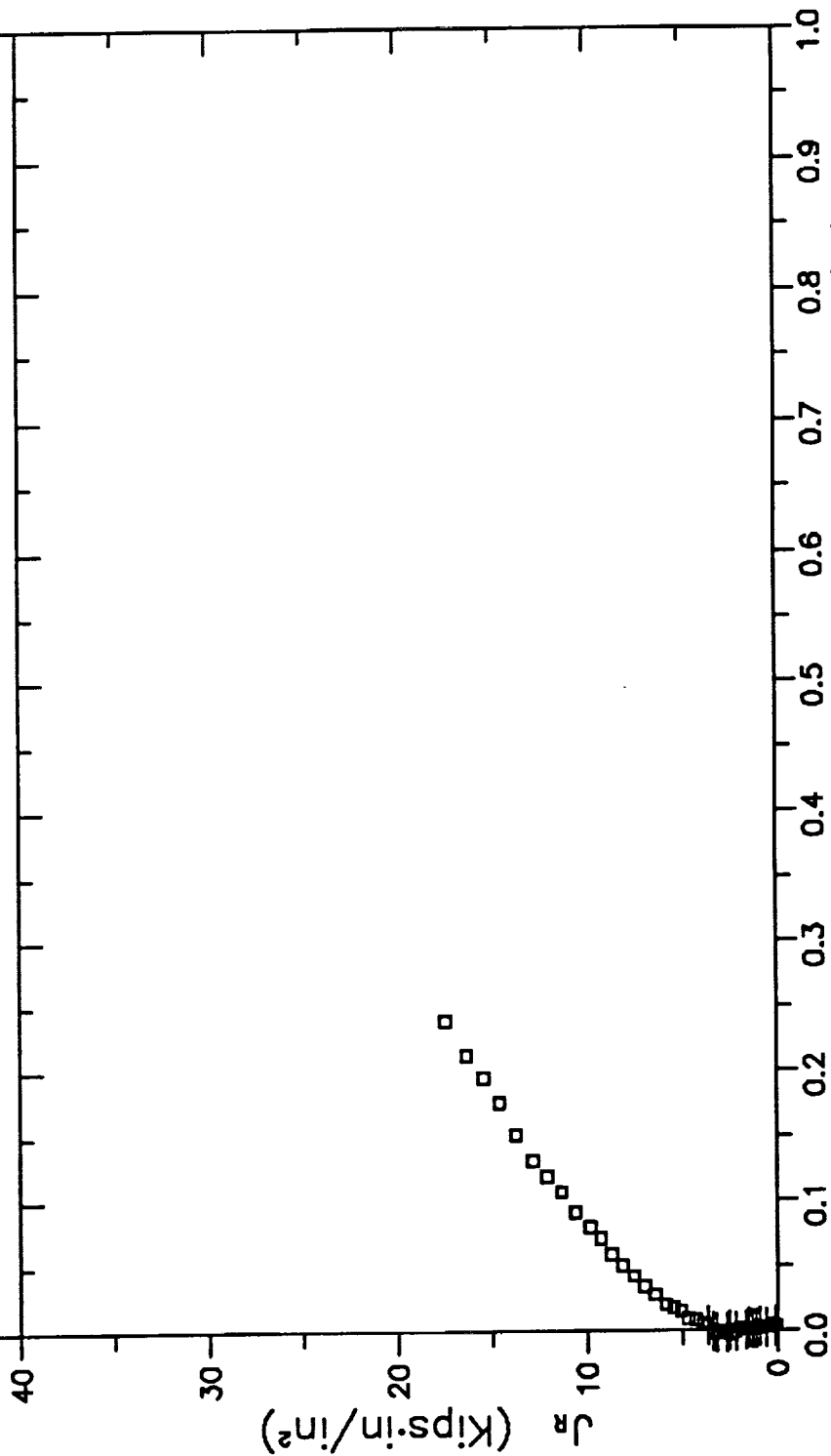
Environment: Unknown; 298.4°F

Type: Compact Specimen (Side Grooved)

Specimen Orientation: C-L

Specimen Thickness: 1 in.

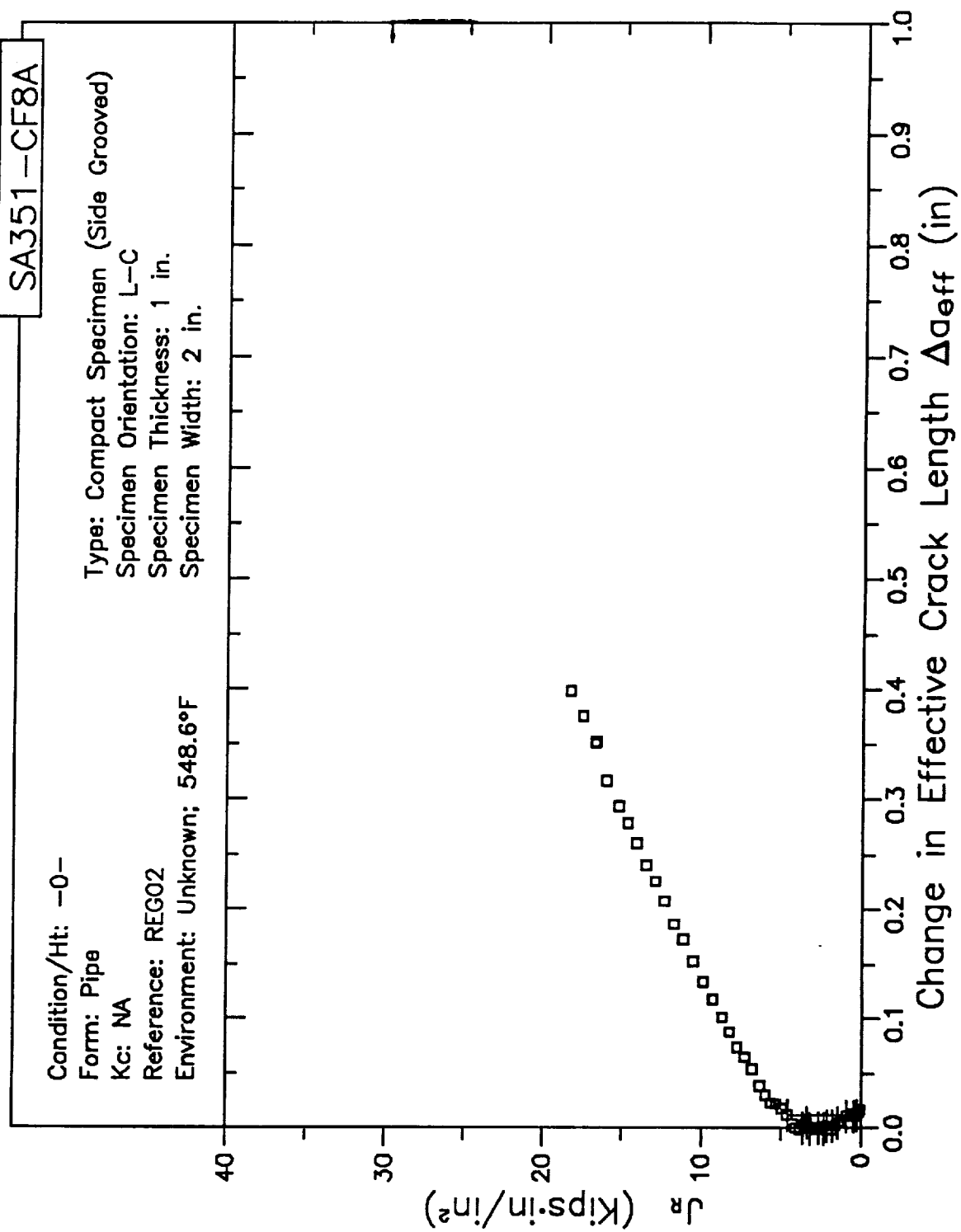
Specimen Width: 2 in.



A3-84

c-4.

# RESISTANCE CURVE

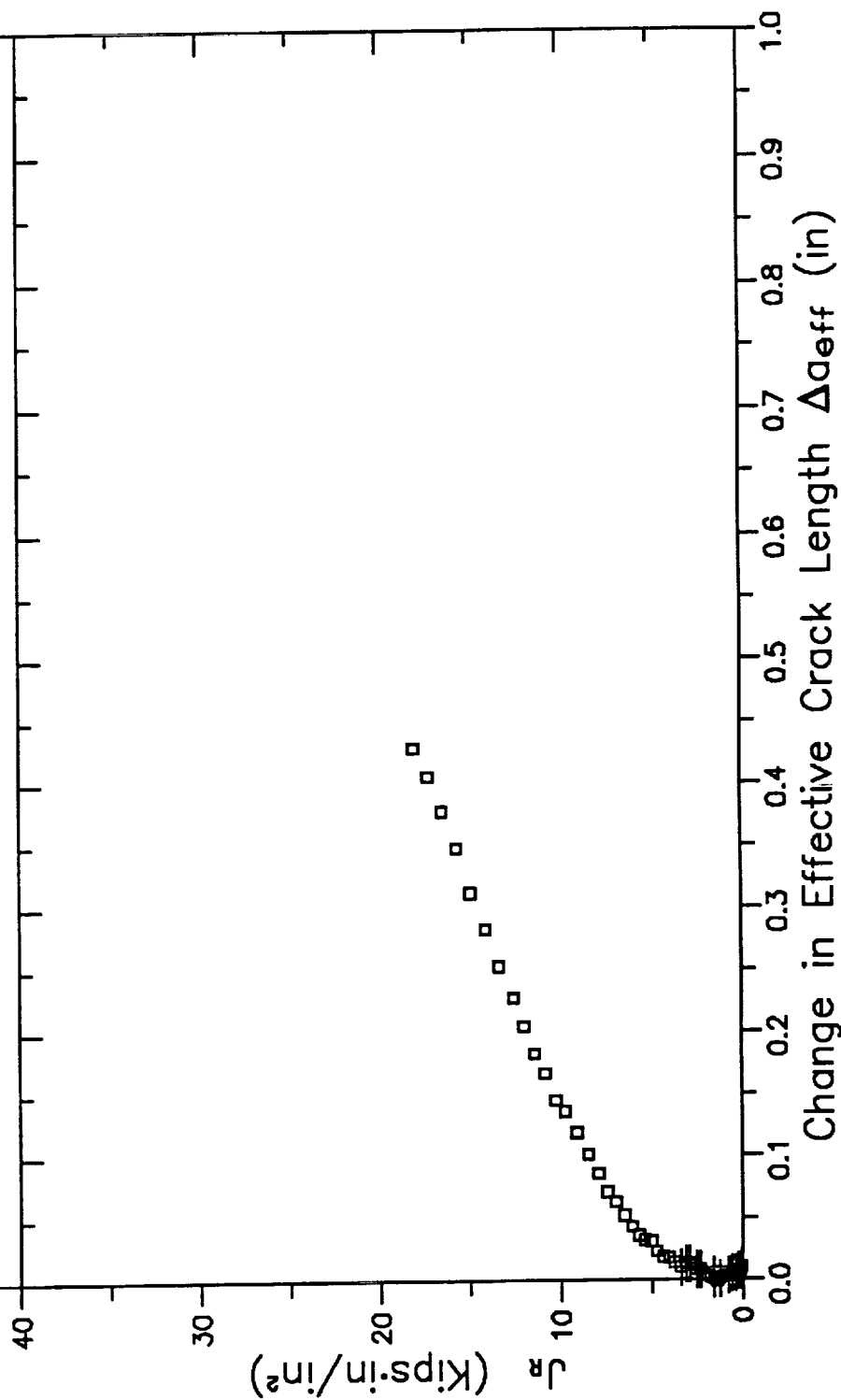


# RESISTANCE CURVE

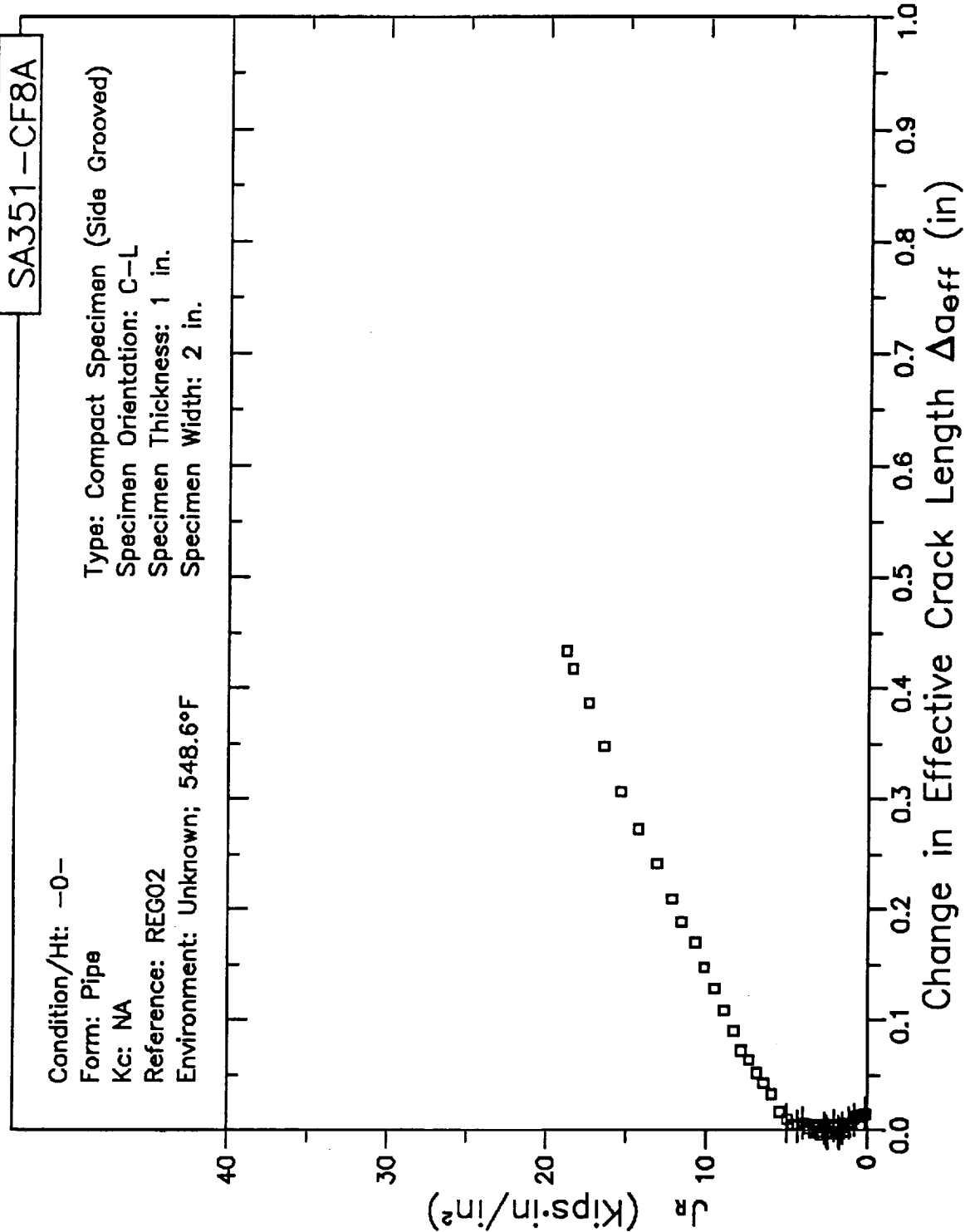
SA351-CF8A

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG02  
Environment: Unknown; 548.6°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 1 in.  
Specimen Width: 2 in.



# RESISTANCE CURVE

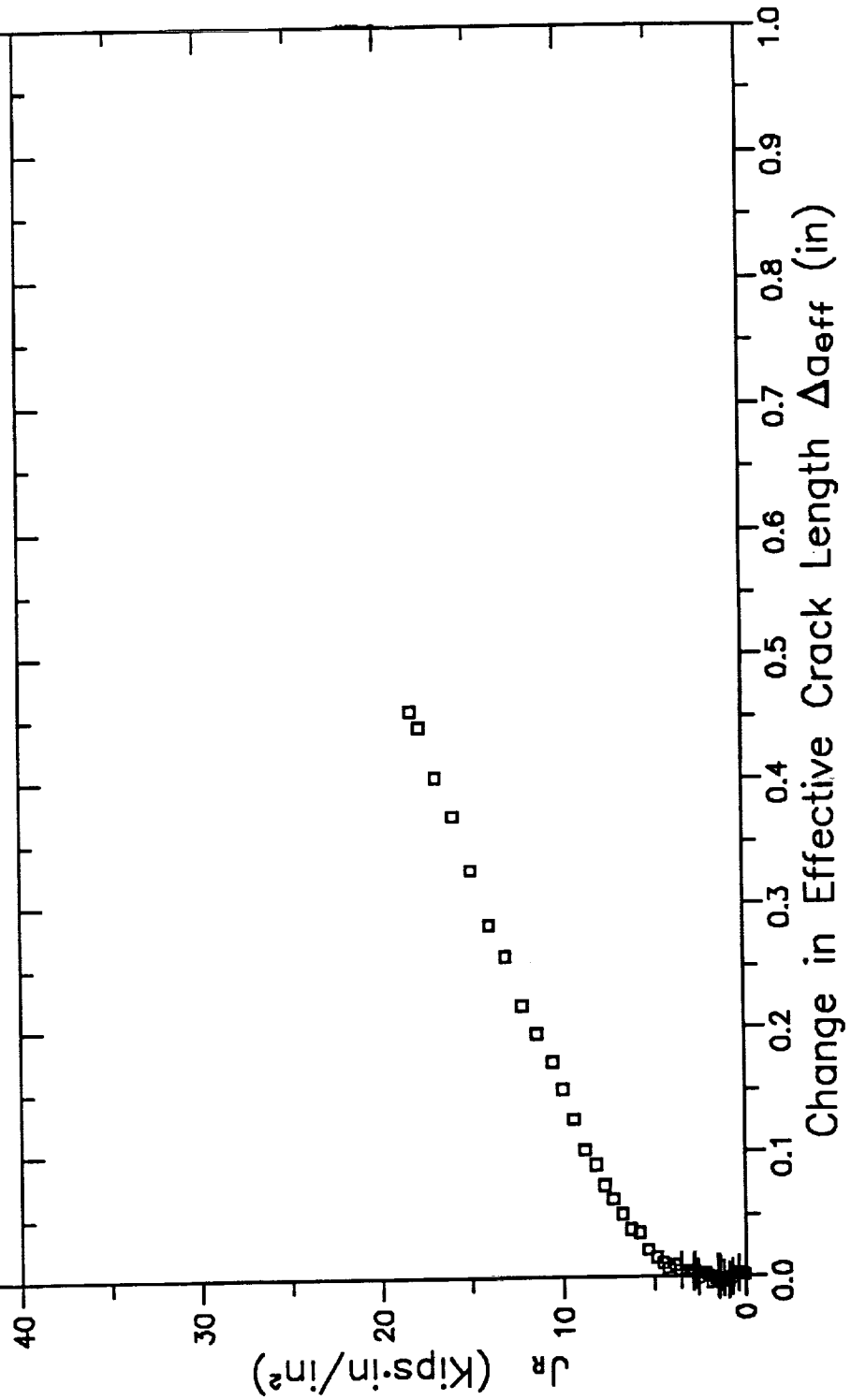


# RESISTANCE CURVE

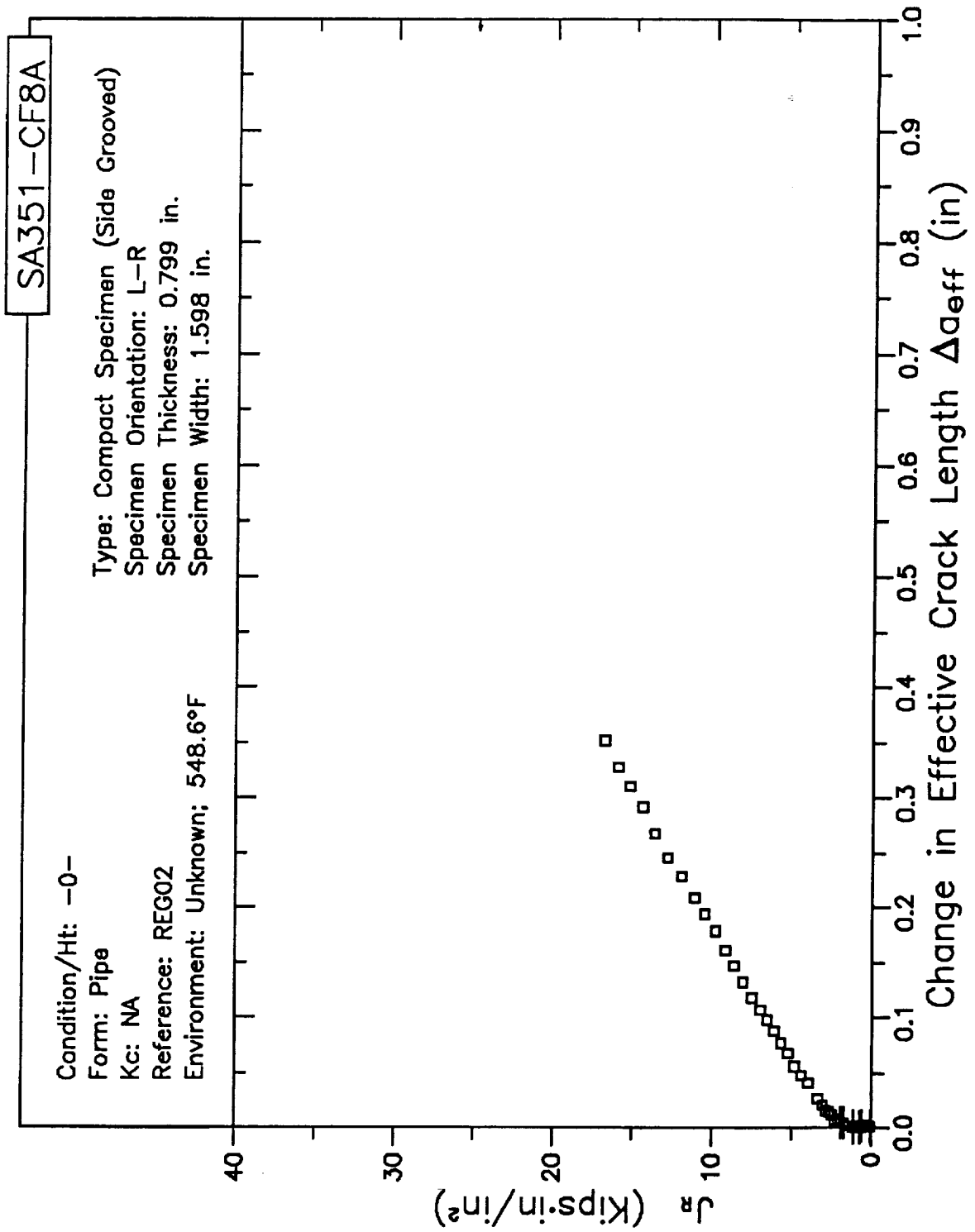
SA351-CF8A

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG02  
Environment: Unknown; 548.6°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: C-L  
Specimen Thickness: 1 in.  
Specimen Width: 2 in.



# RESISTANCE CURVE

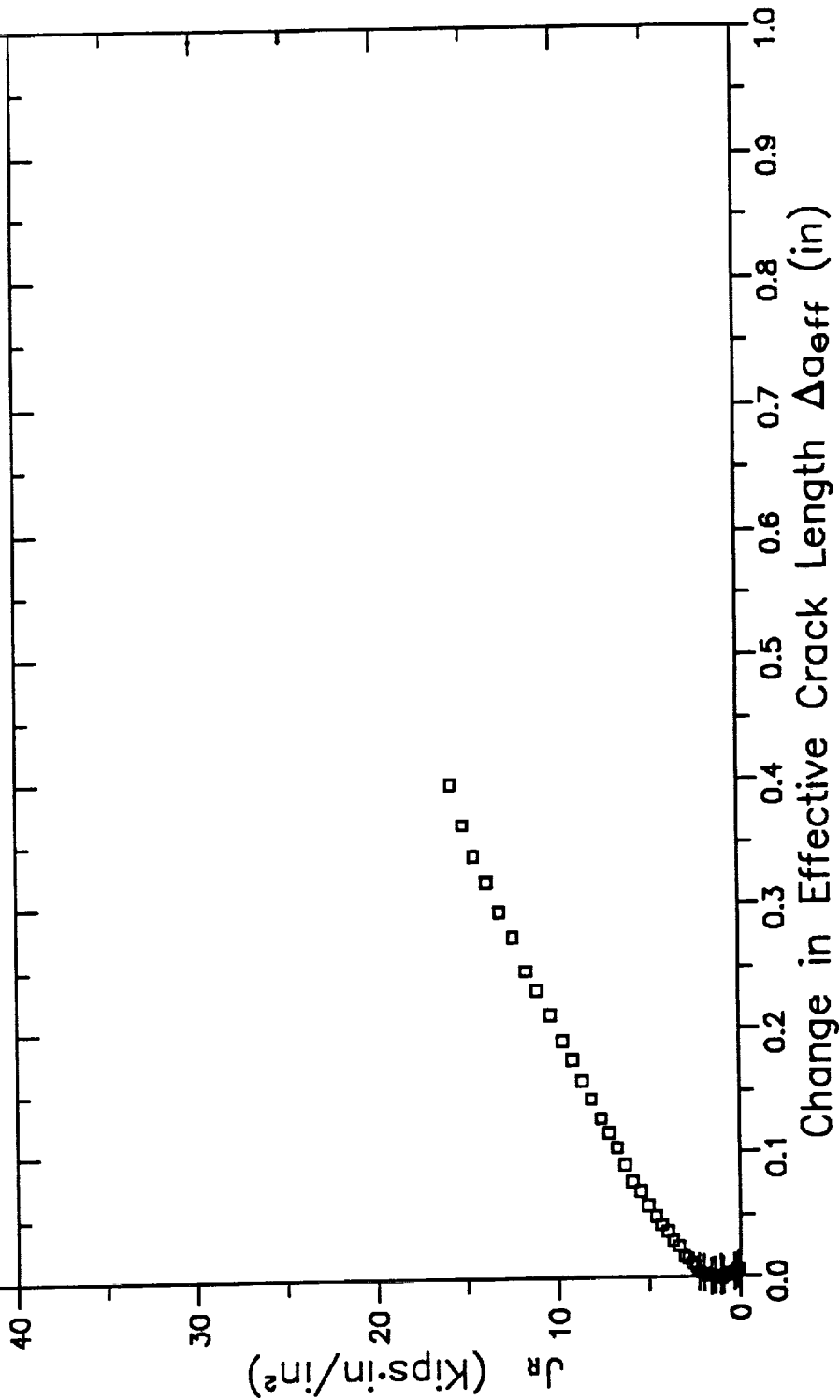


# RESISTANCE CURVE

SA351-CF8A

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG02  
Environment: Unknown; 548.6°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: C-R  
Specimen Thickness: 0.799 in.  
Specimen Width: 1.598 in.





# RESISTANCE CURVE

SA351-CF8M

Condition/Ht: ANNEALED 3000 HOURS AT 662 F

Form: Slab (Cast Flat) (3 in. thick)

Type: Compact Specimen (Side Grooved)

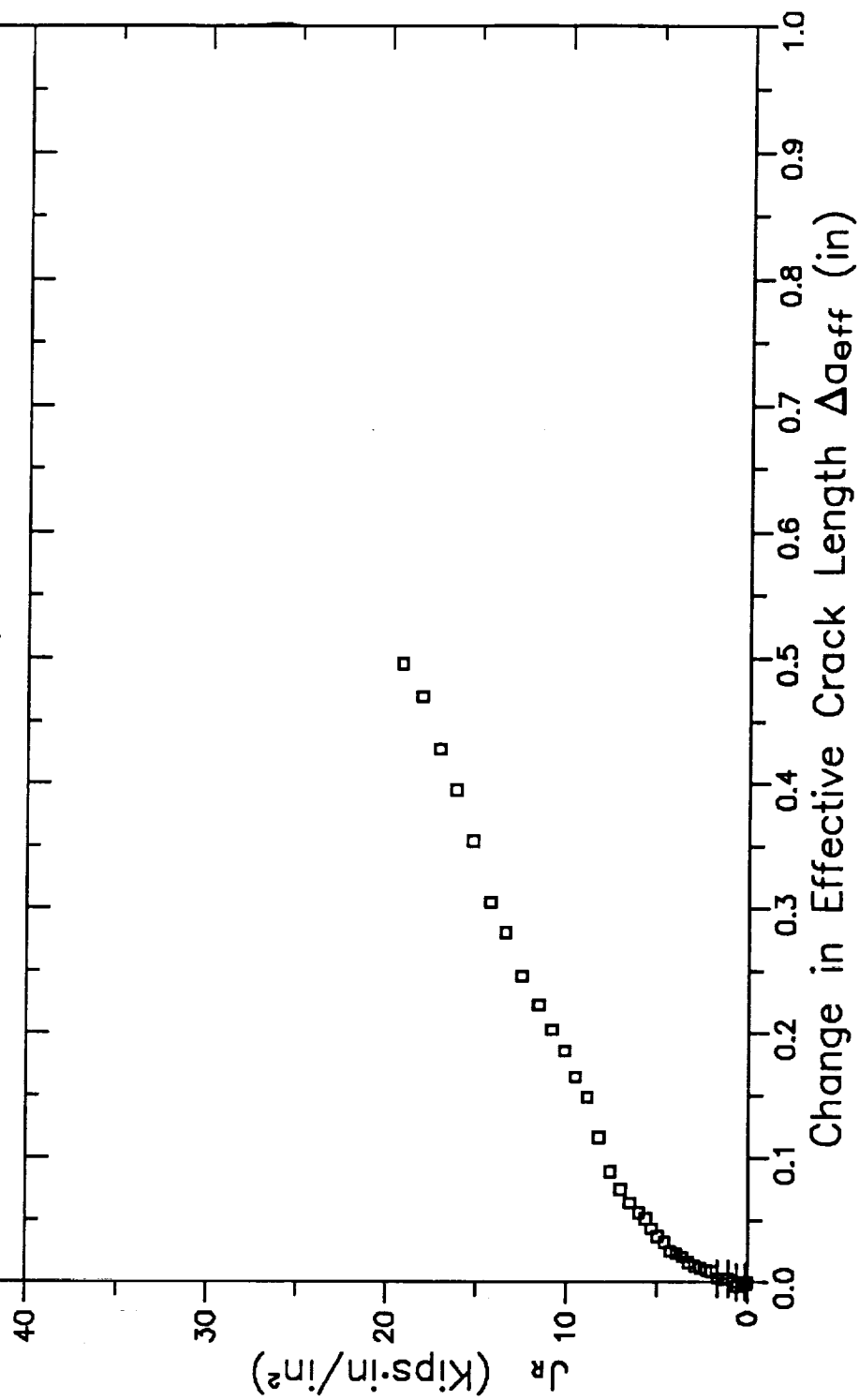
Kc: NA

Reference: REG02

Specimen Thickness: 1 in.

Environment: Unknown; 77°F

Specimen Width: 2 in.



# RESISTANCE CURVE

SA351-CF8M

Condition/Ht: ANNEALED 3000 HOURS AT 752 F

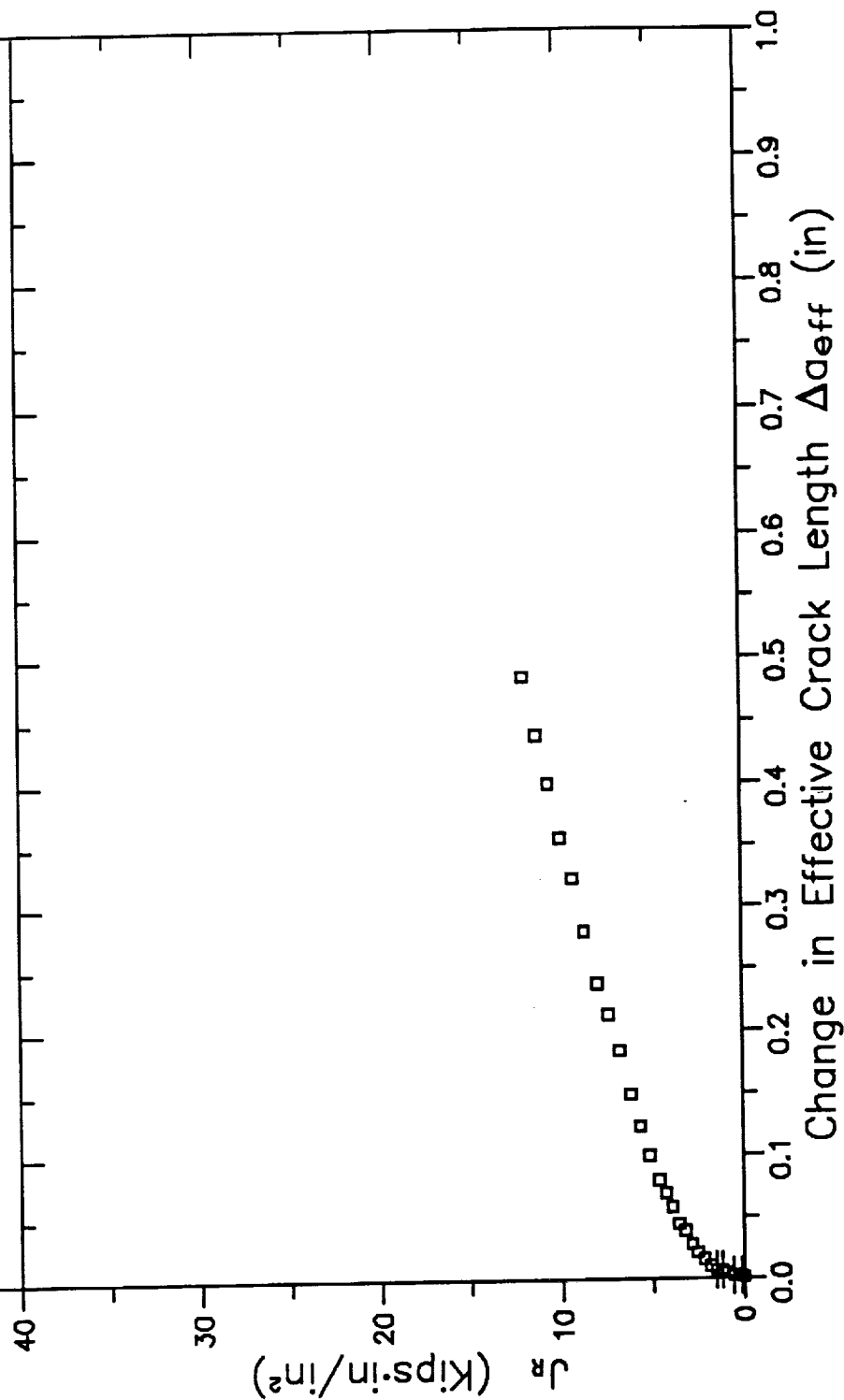
Form: Slab (Cast Flat) (3 in. thick) Type: Compact Specimen (Side Grooved)

Kc: NA

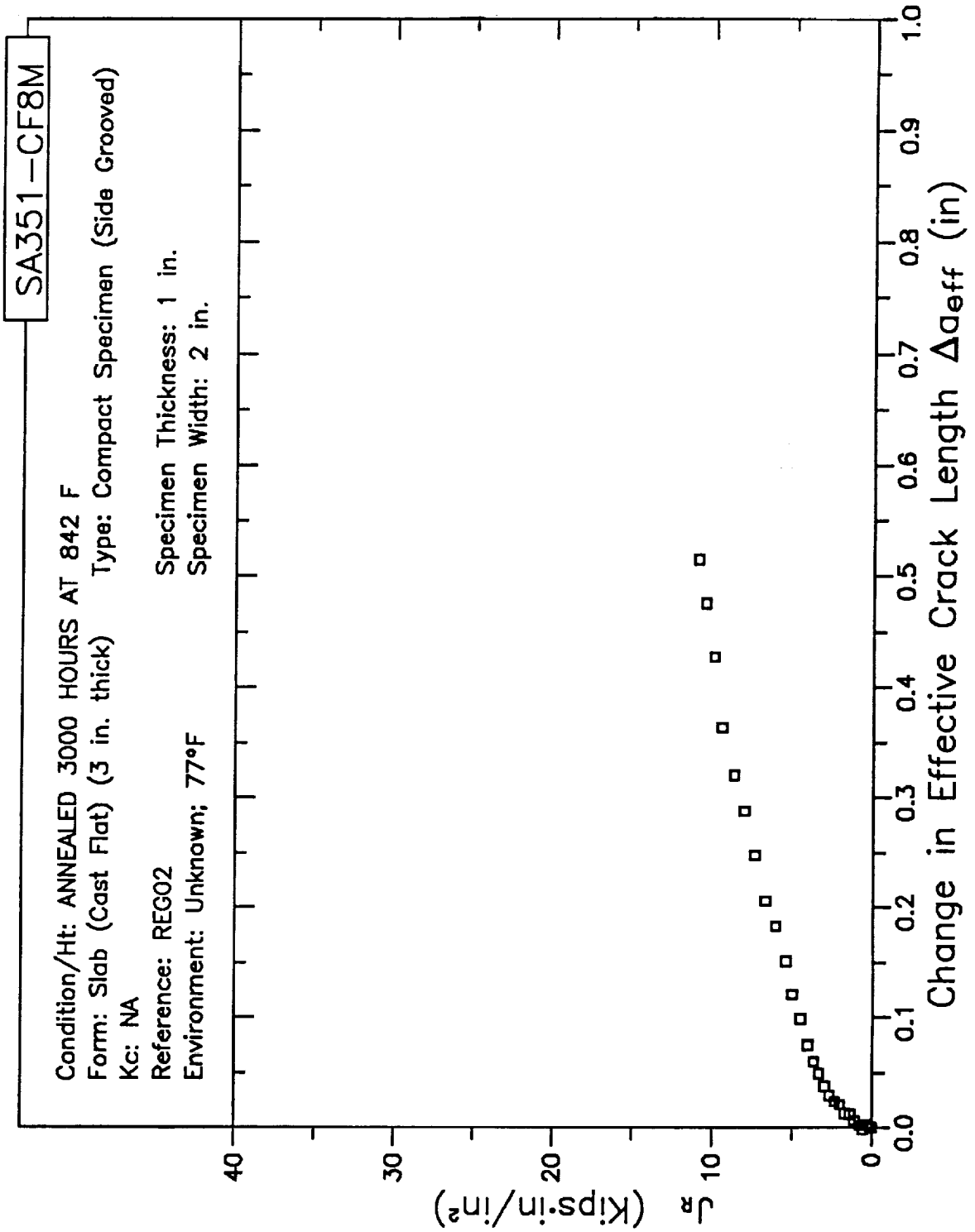
Reference: REG02

Specimen Thickness: 1 in.

Environment: Unknown; 77°F Specimen Width: 2 in.



# RESISTANCE CURVE



# RESISTANCE CURVE

SA351-CF8M

Condition/Ht: ANNEALED 3000 HOURS AT 842 F

Form: Slab (Cast Flat) (3 in. thick)

Type: Compact Specimen (Side Grooved)

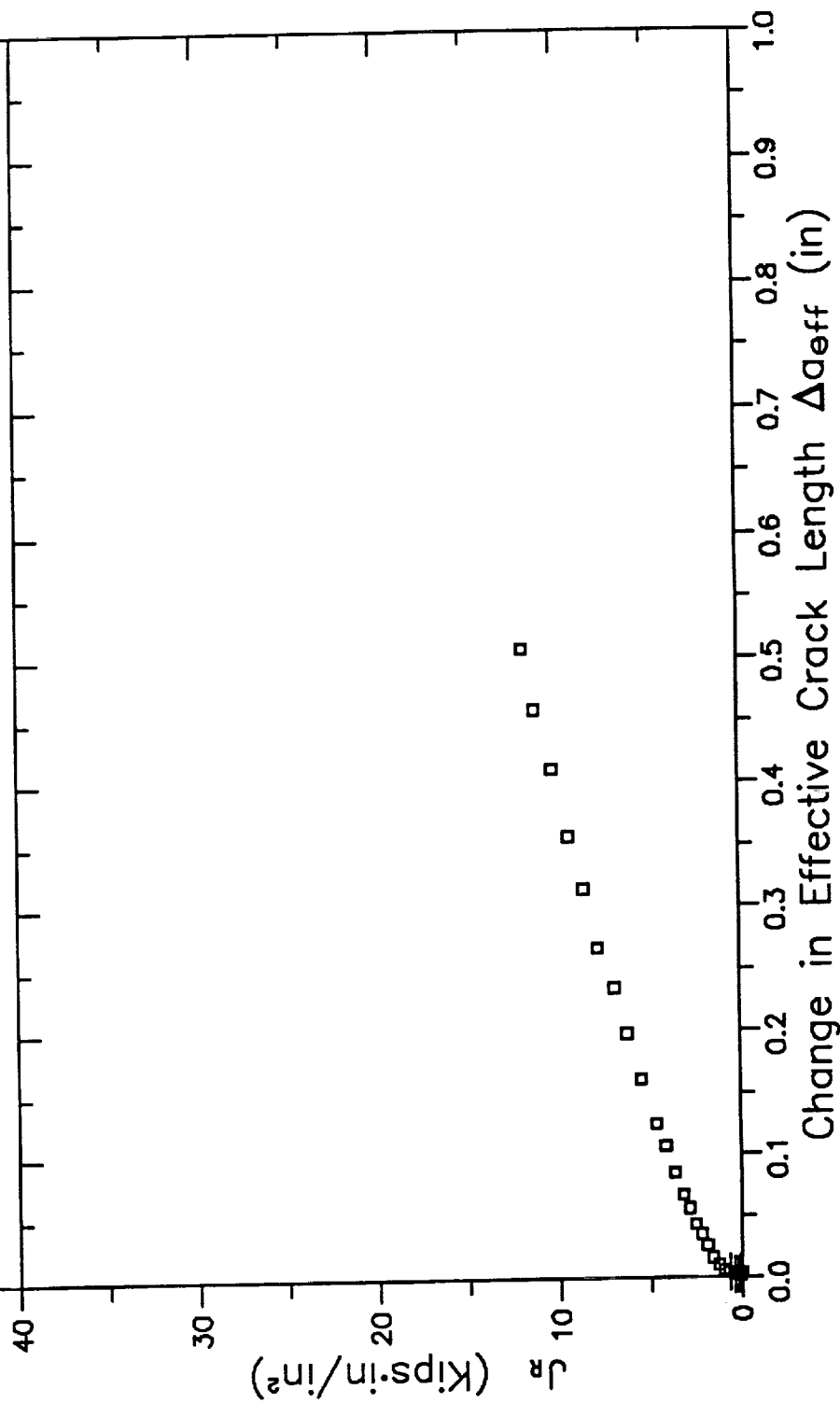
Kc: NA

Reference: REG02

Specimen Thickness: 1 in.

Environment: Unknown; 77°F

Specimen Width: 2 in.



# RESISTANCE CURVE

SA351-CF8M

Condition/Ht: -0-

Form: Slab (Cast Flat) (3 in. thick)

Type: Compact Specimen (Side Grooved)

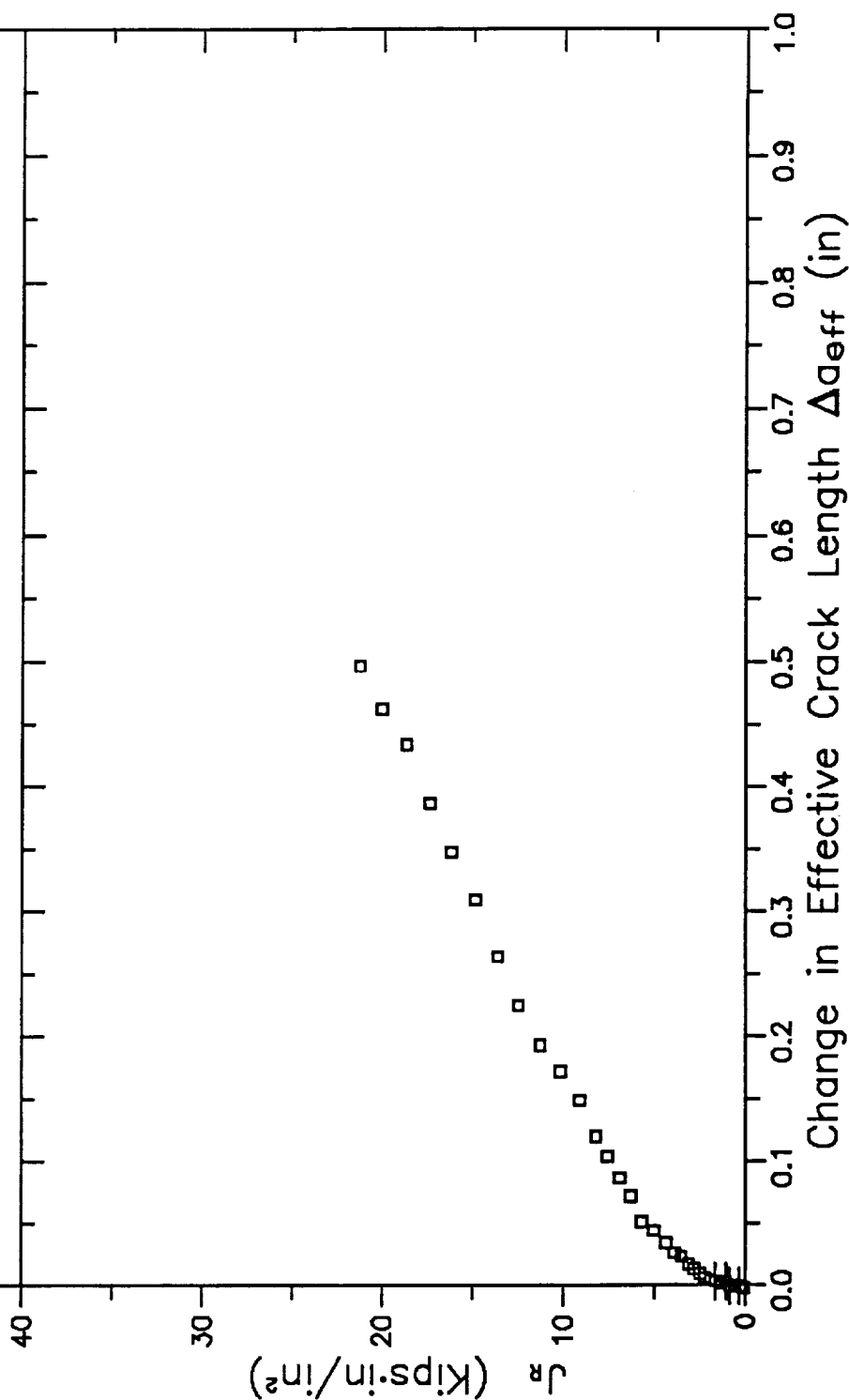
Kc: NA

Reference: REG02

Specimen Thickness: 1 in.

Environment: Unknown; 77°F

Specimen Width: 2 in.



# RESISTANCE CURVE

SA351-CF8M

Condition/Ht: -0-

Form: Slab (Cast Flat) (3 in. thick)

Type: Compact Specimen (Side Grooved)

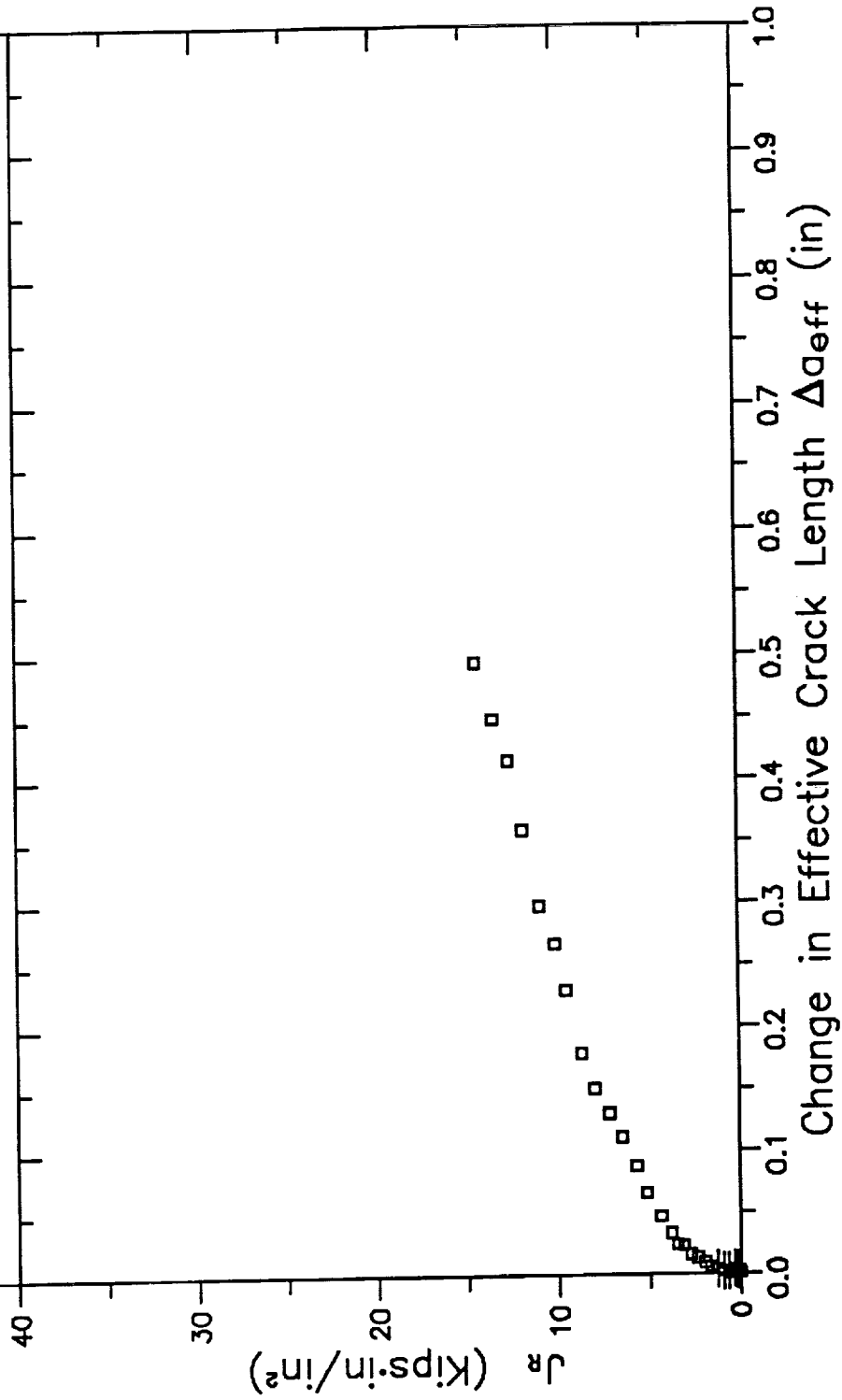
Kc: NA

Reference: REG02

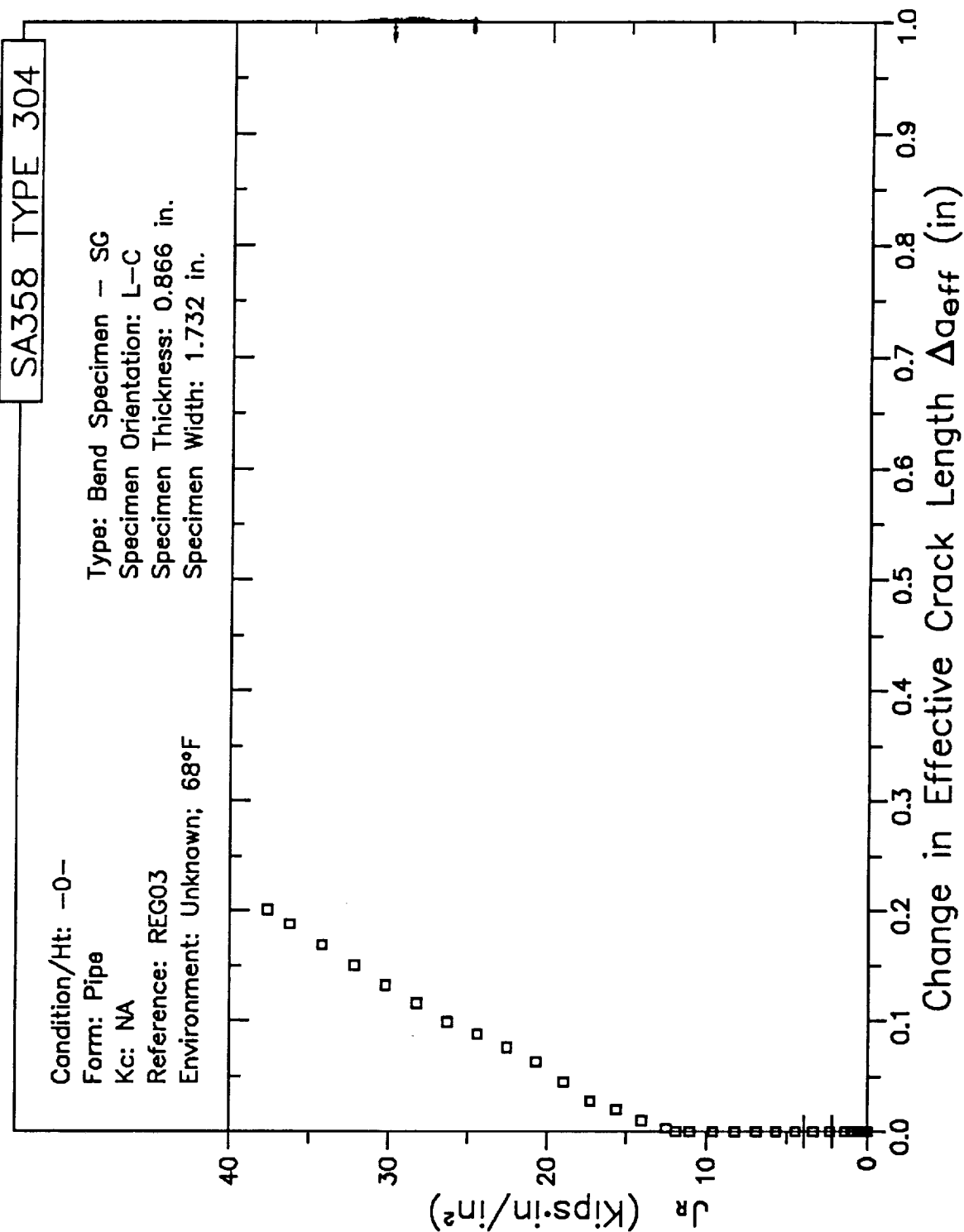
Specimen Thickness: 1 in.

Environment: Unknown; 77°F

Specimen Width: 2 in.



# RESISTANCE CURVE

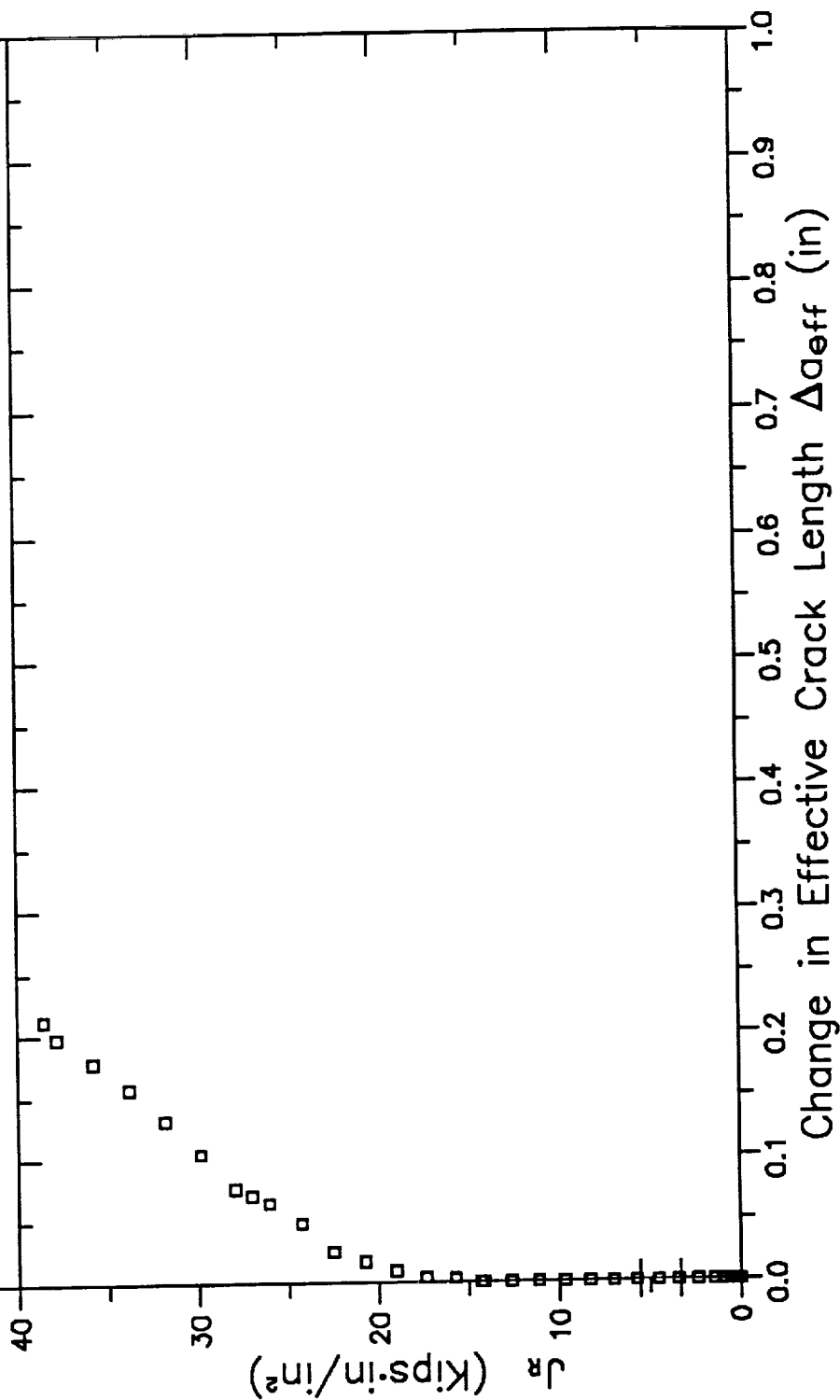


# RESISTANCE CURVE

SA358 TYPE 304

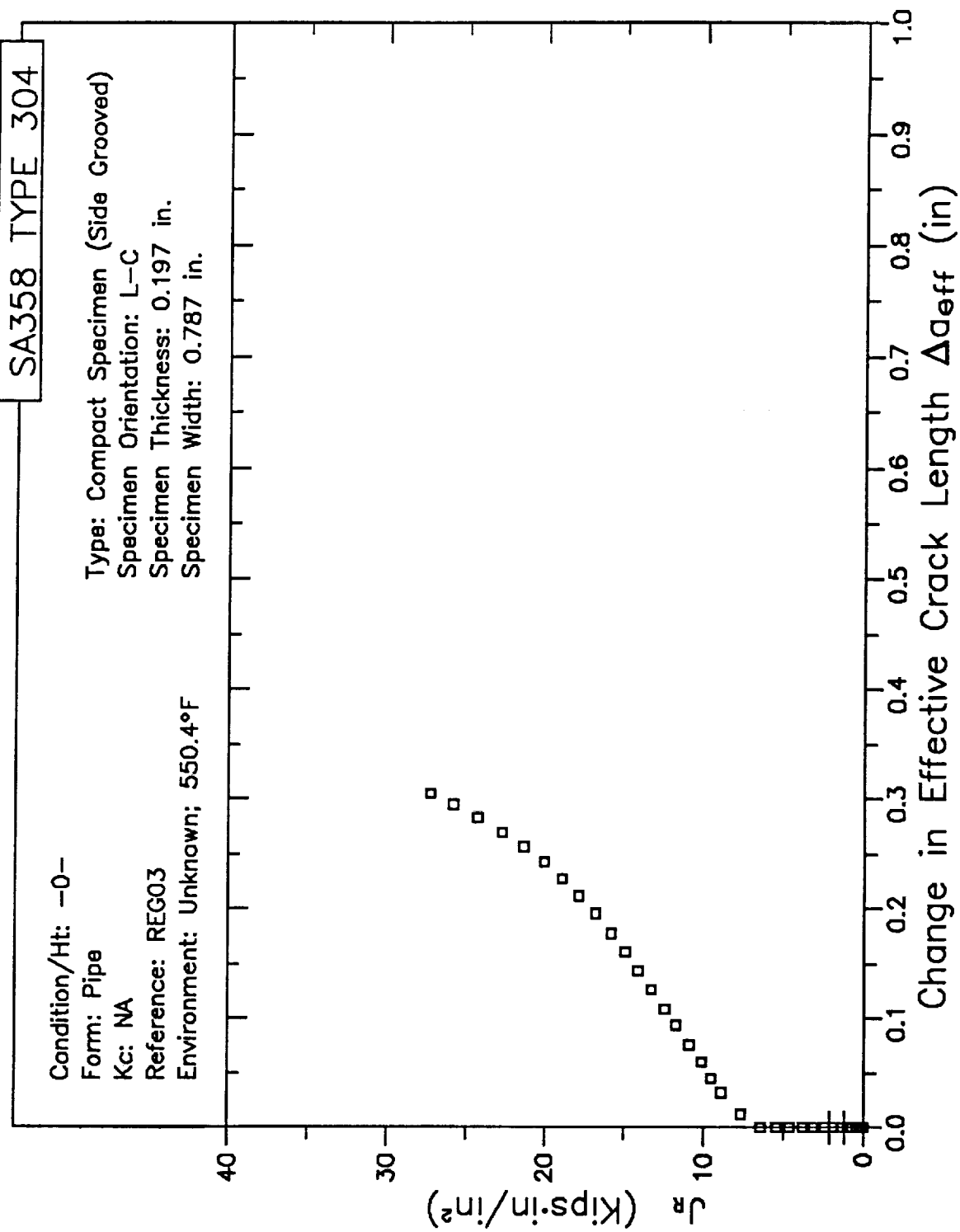
Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG03  
Environment: Unknown; 68°F

Type: Bend Specimen - SG  
Specimen Orientation: L-C  
Specimen Thickness: 0.866 in.  
Specimen Width: 1.732 in.





# RESISTANCE CURVE

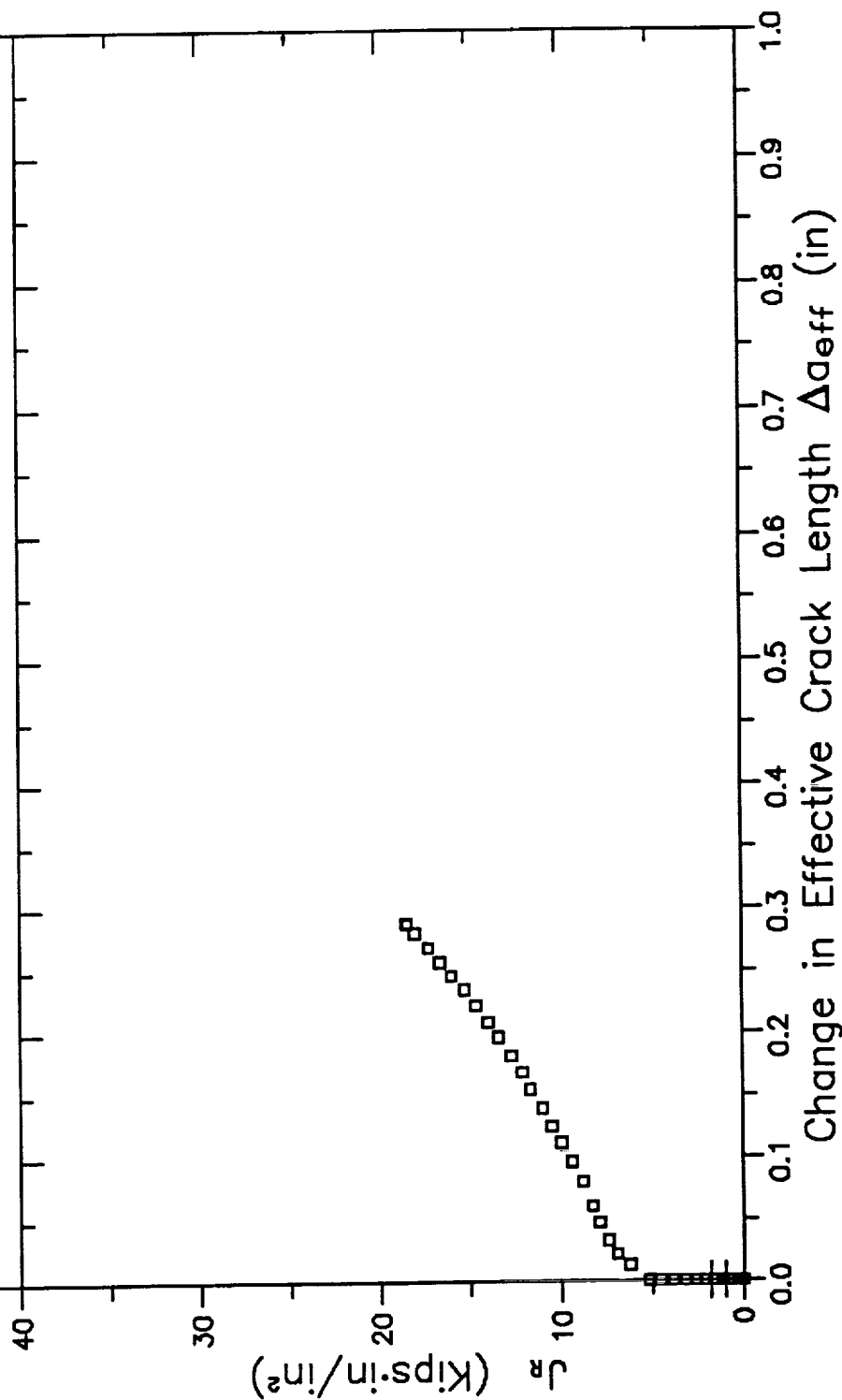


# RESISTANCE CURVE

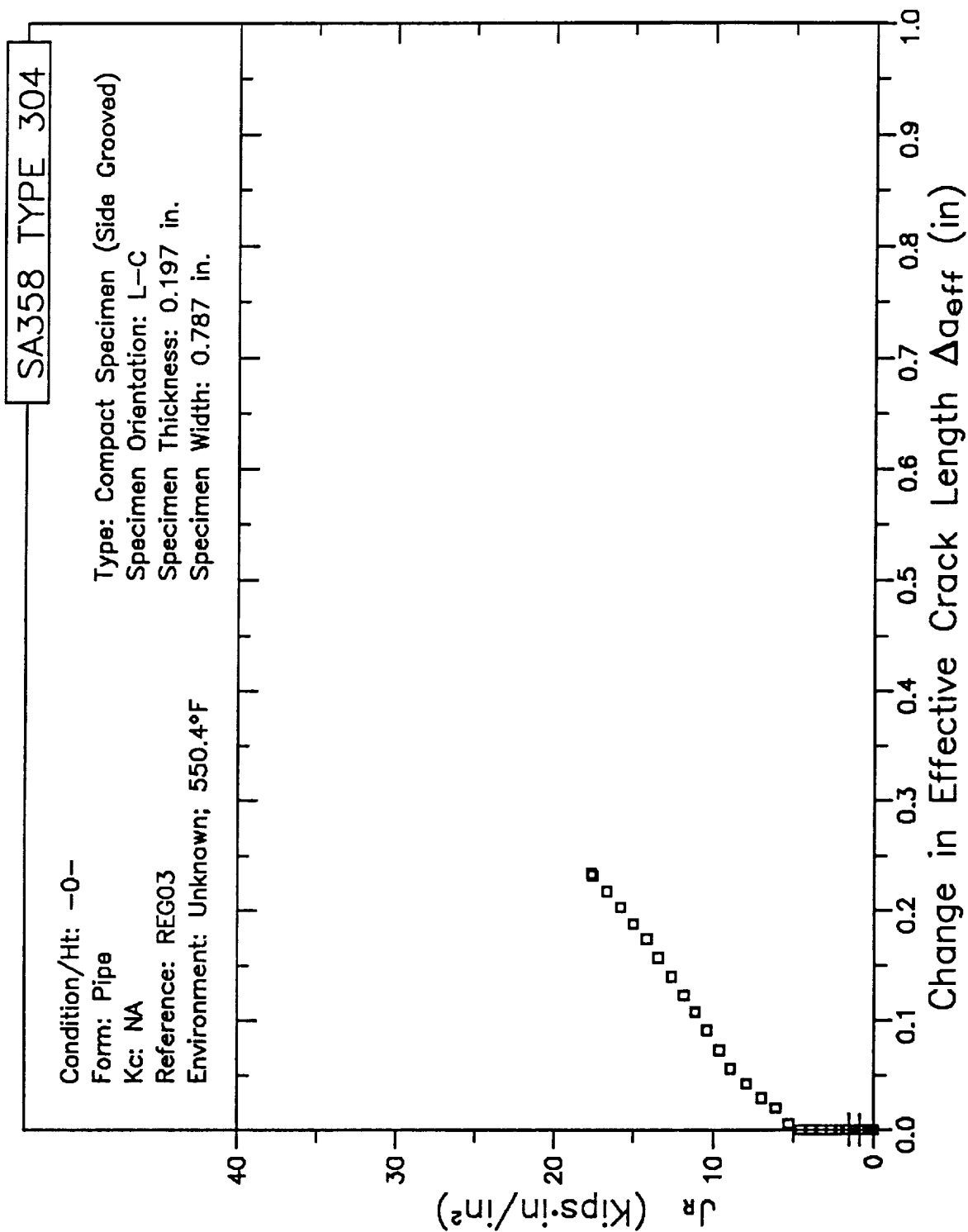
SA358 TYPE 304

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG03  
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 0.197 in.  
Specimen Width: 0.787 in.



# RESISTANCE CURVE

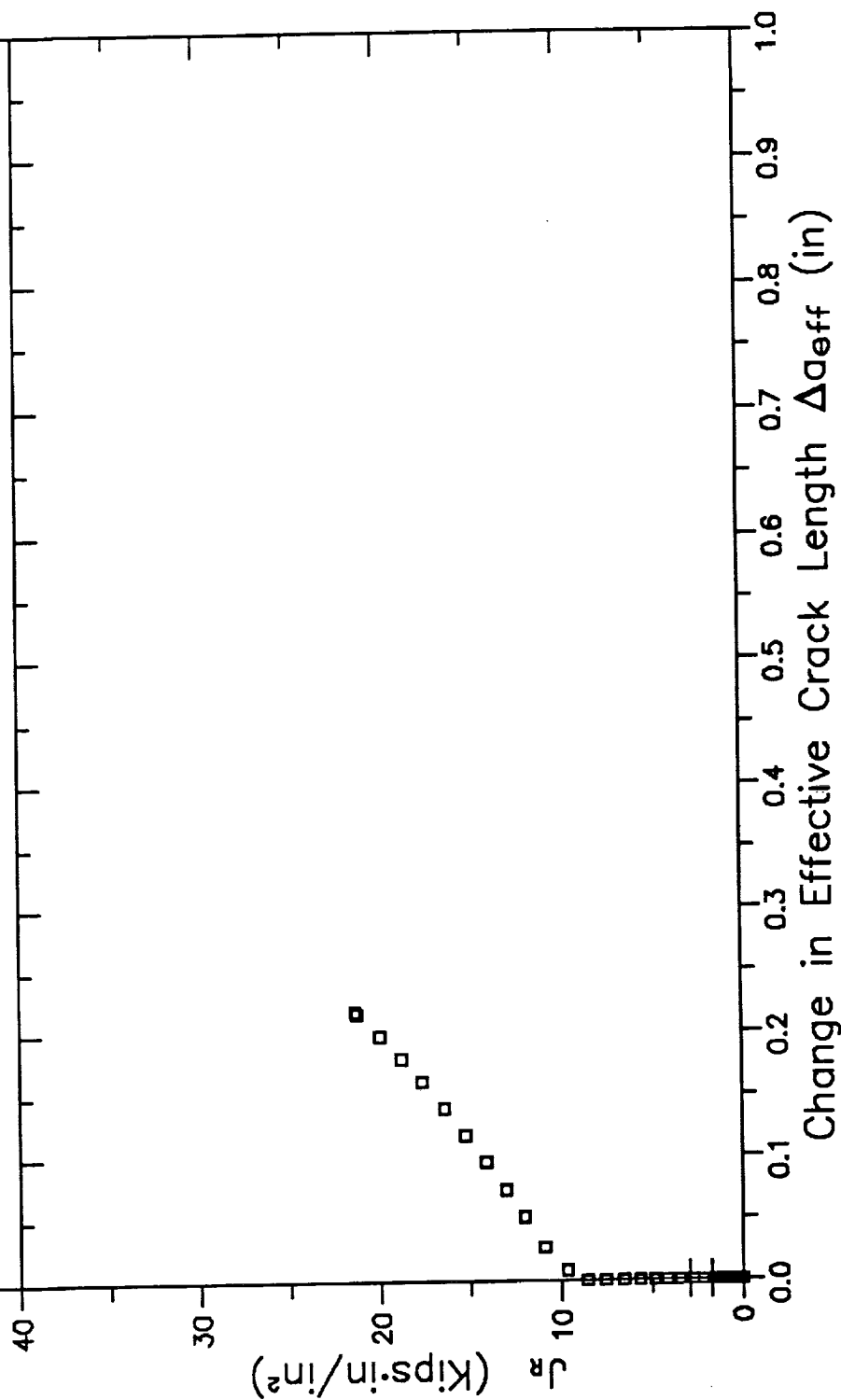


# RESISTANCE CURVE

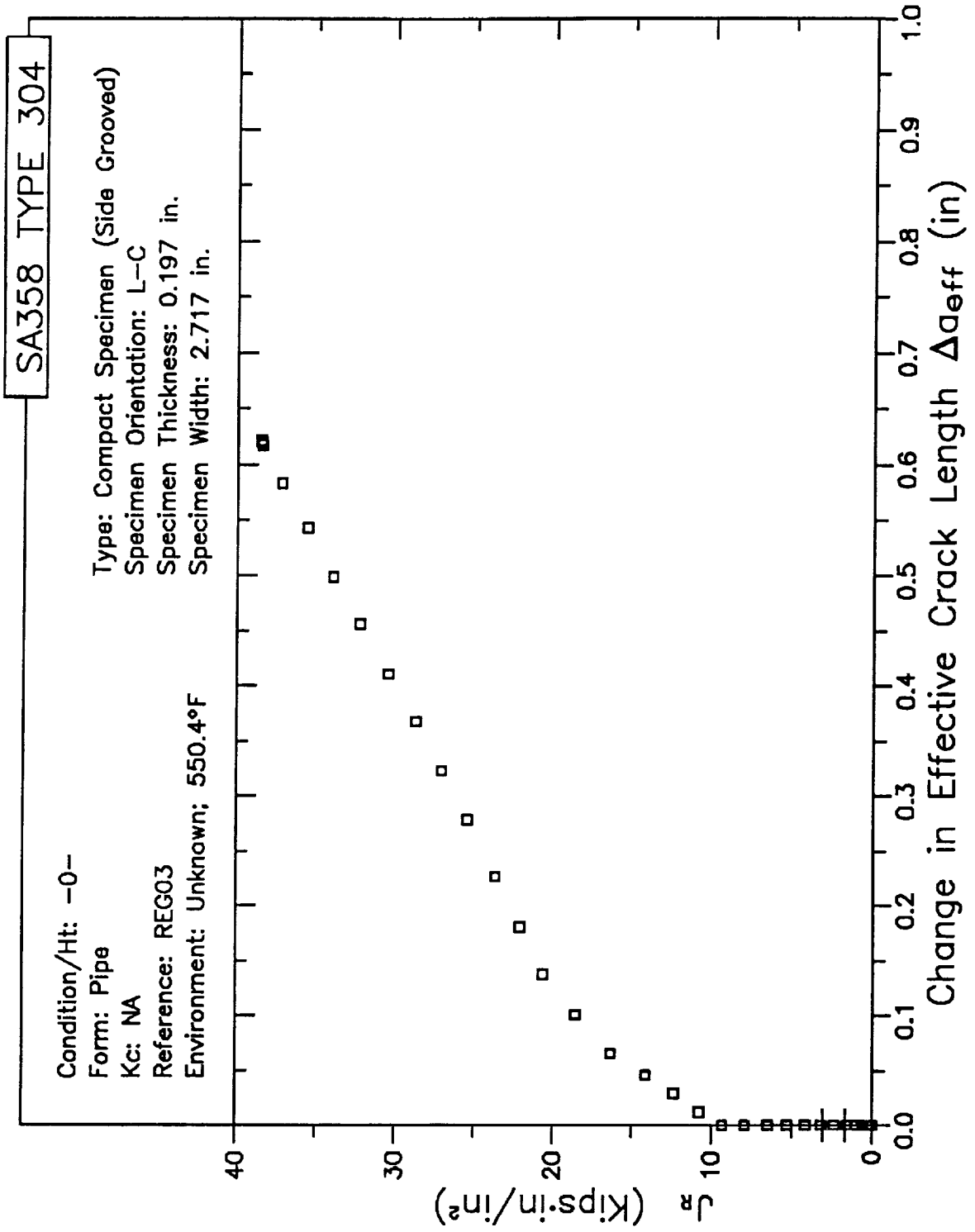
SA358 TYPE 304

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG03  
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 0.197 in.  
Specimen Width: 1.969 in.



# RESISTANCE CURVE

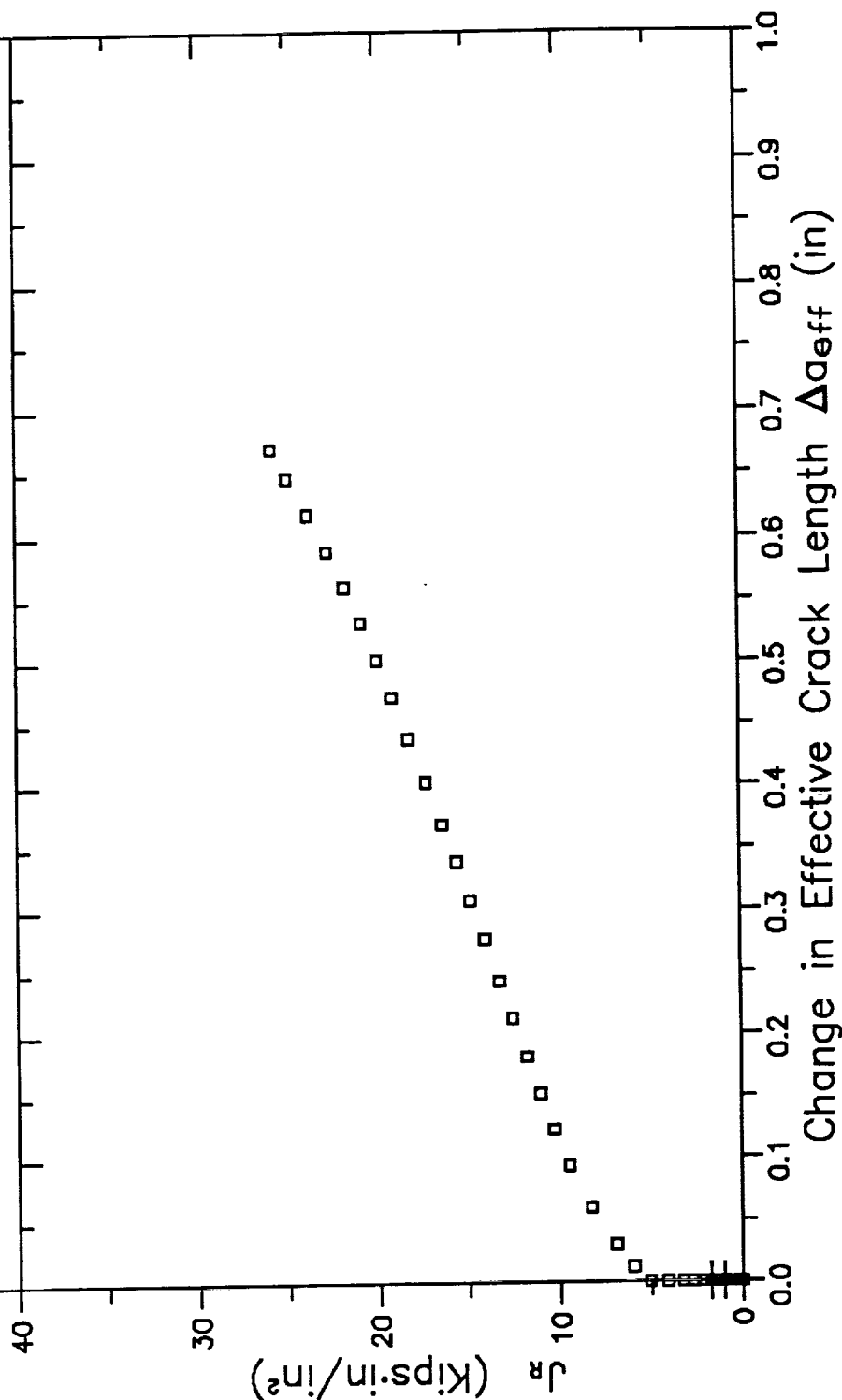


# RESISTANCE CURVE

SA358 TYPE 304

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG03  
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 0.394 in.  
Specimen Width: 1.969 in.

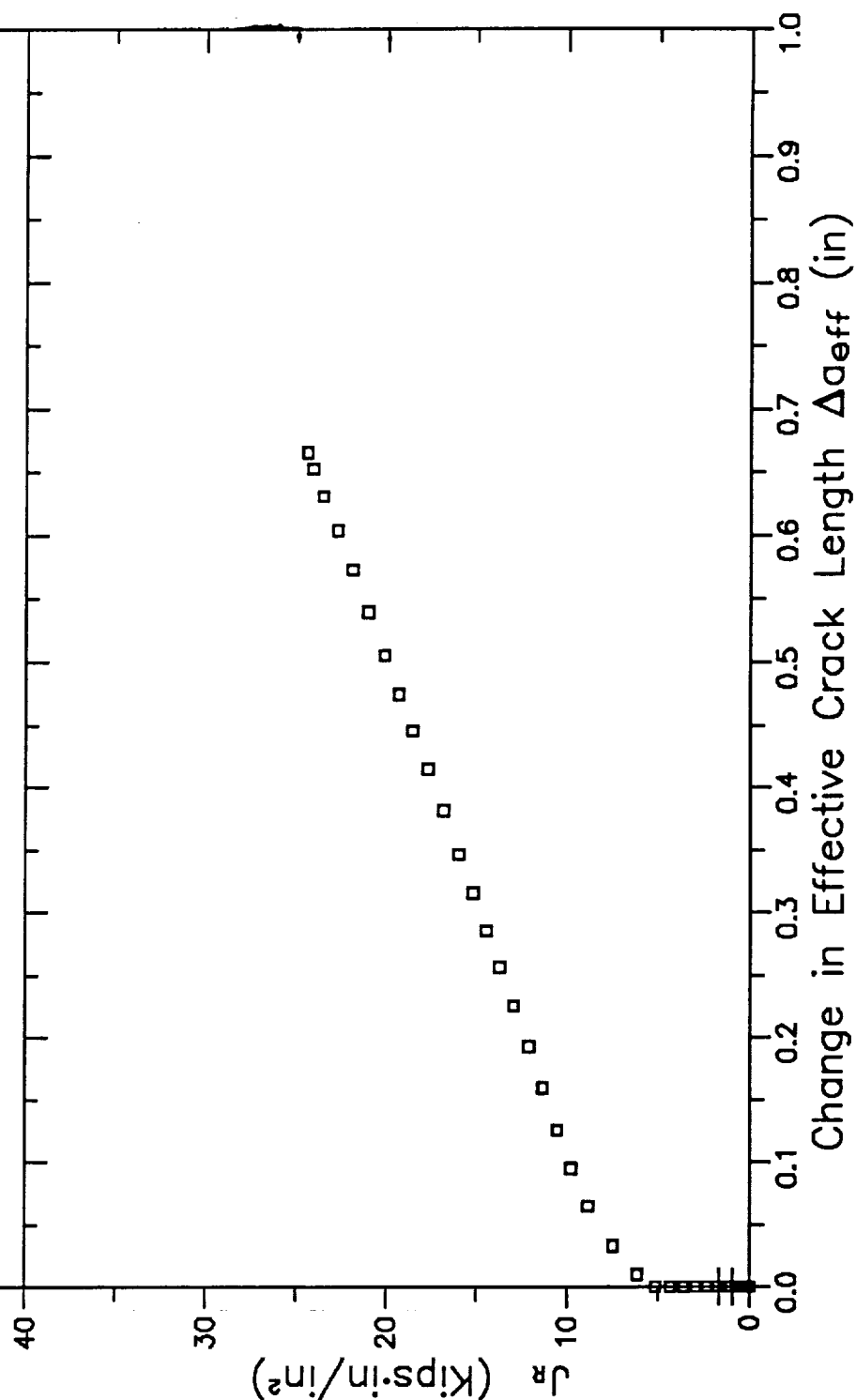


# RESISTANCE CURVE

SA358 TYPE 304

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG03  
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 0.394 in.  
Specimen Width: 1.969 in.

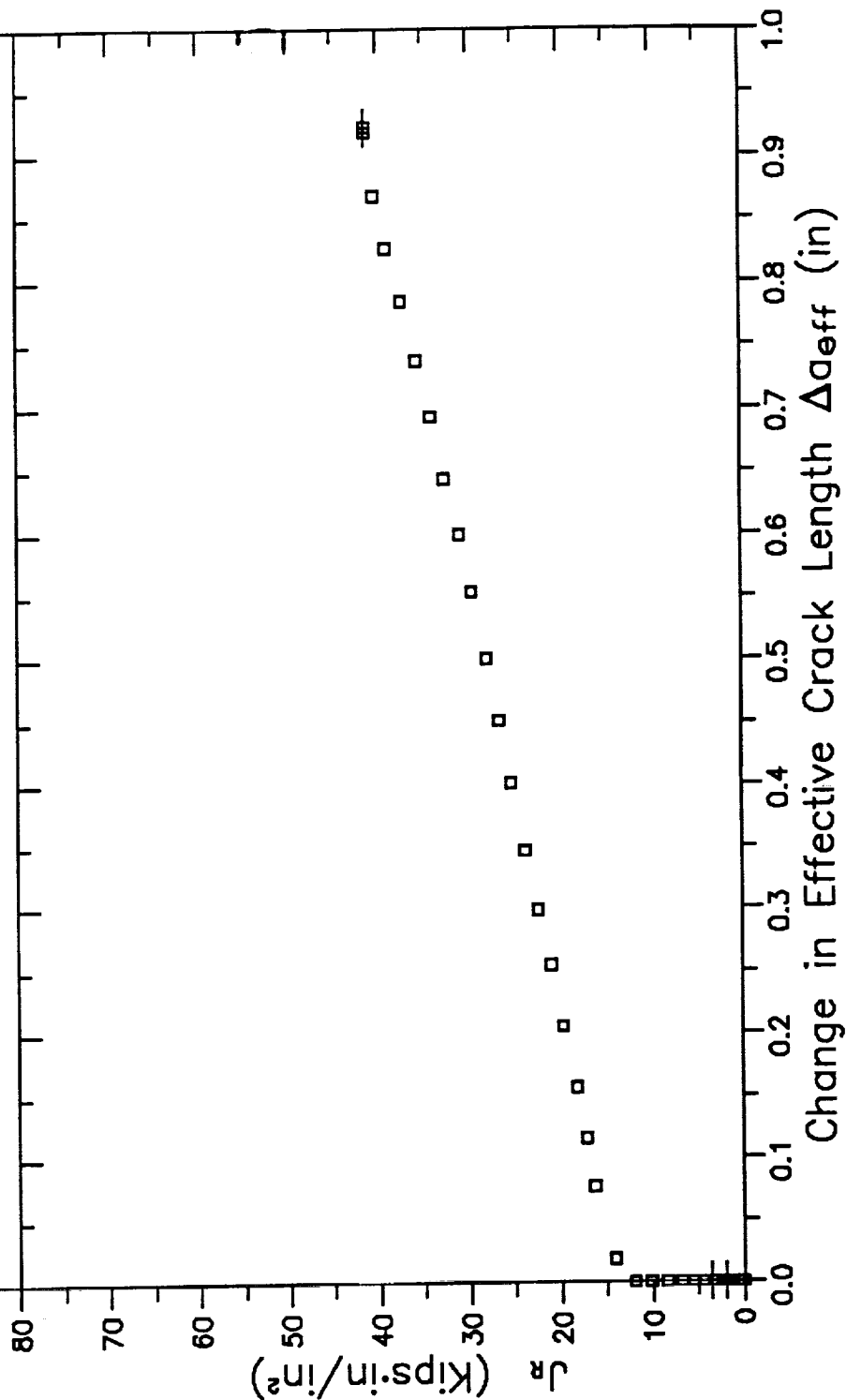


# RESISTANCE CURVE

SA358 TYPE 304

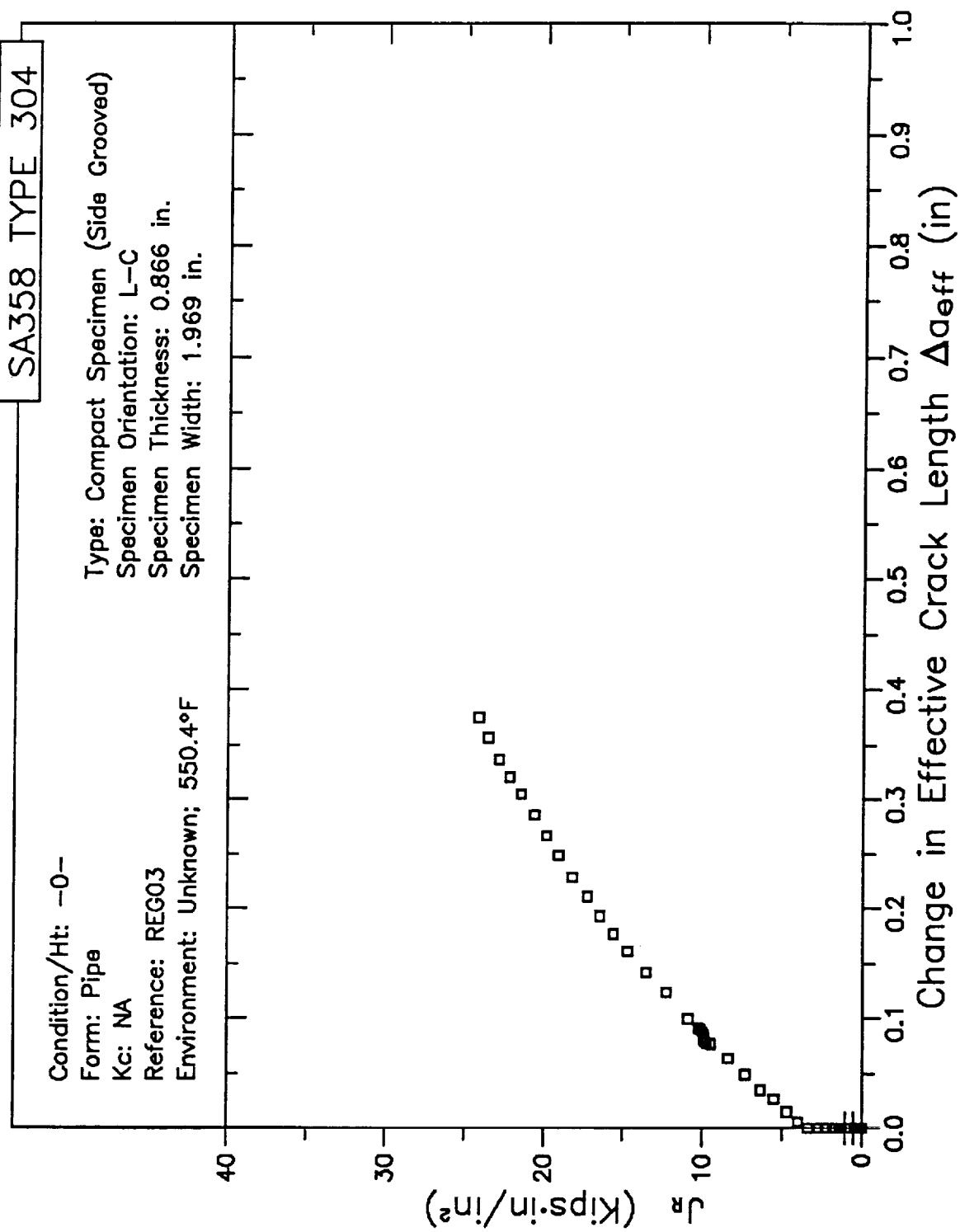
Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG03  
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 0.787 in.  
Specimen Width: 2.717 in.





# RESISTANCE CURVE

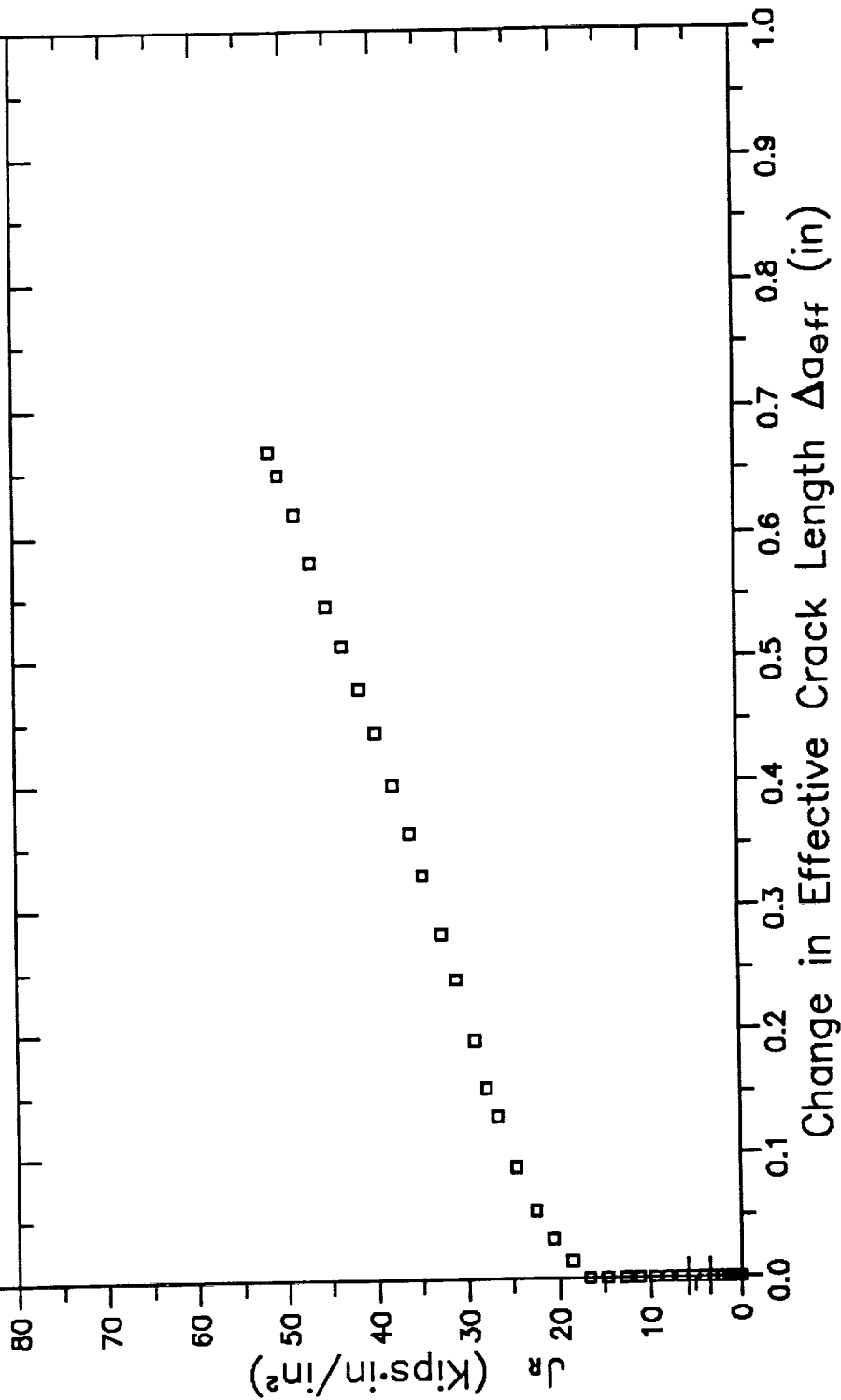


# RESISTANCE CURVE

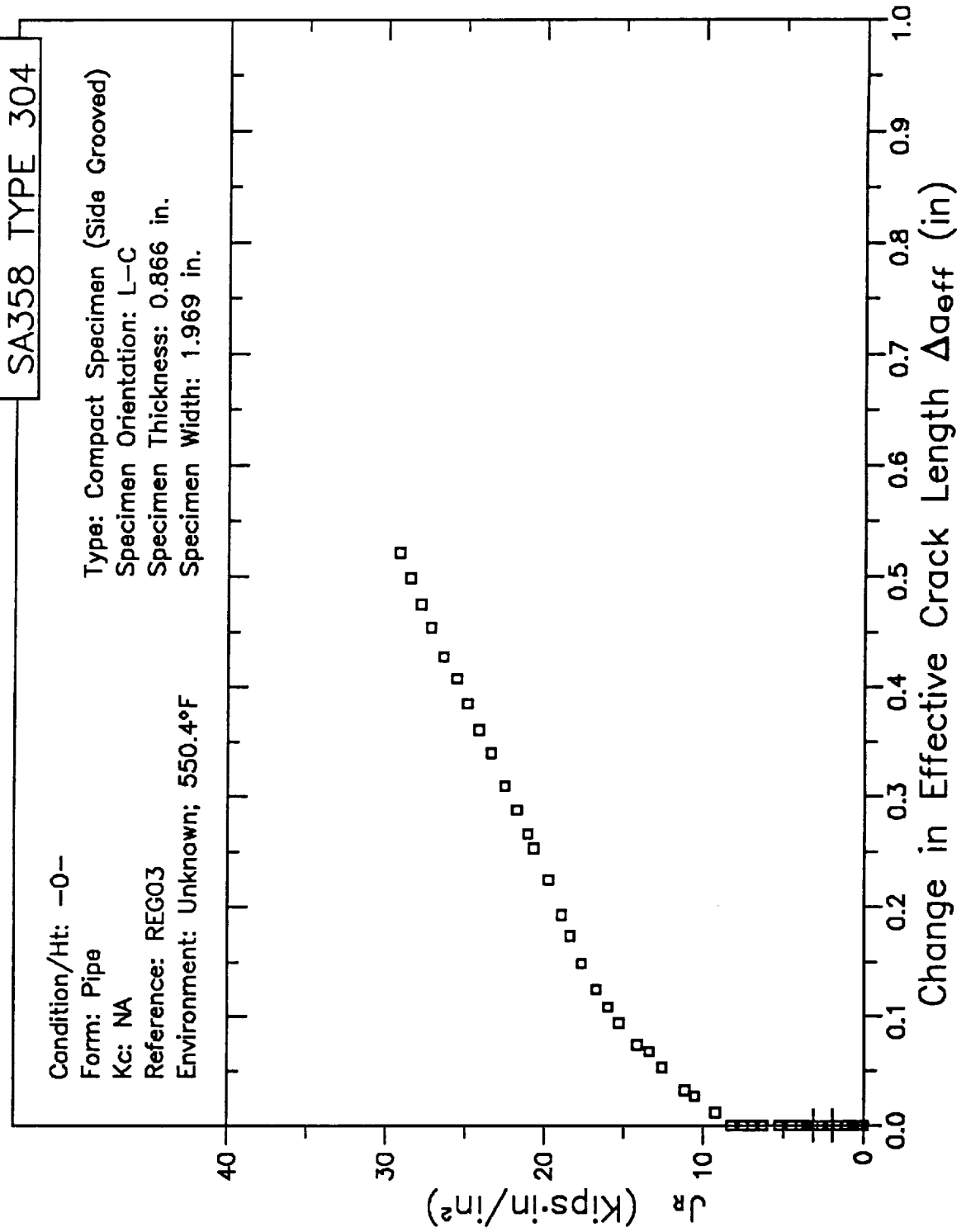
SA358 TYPE 304

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG03  
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 0.866 in.  
Specimen Width: 1.969 in.



# RESISTANCE CURVE

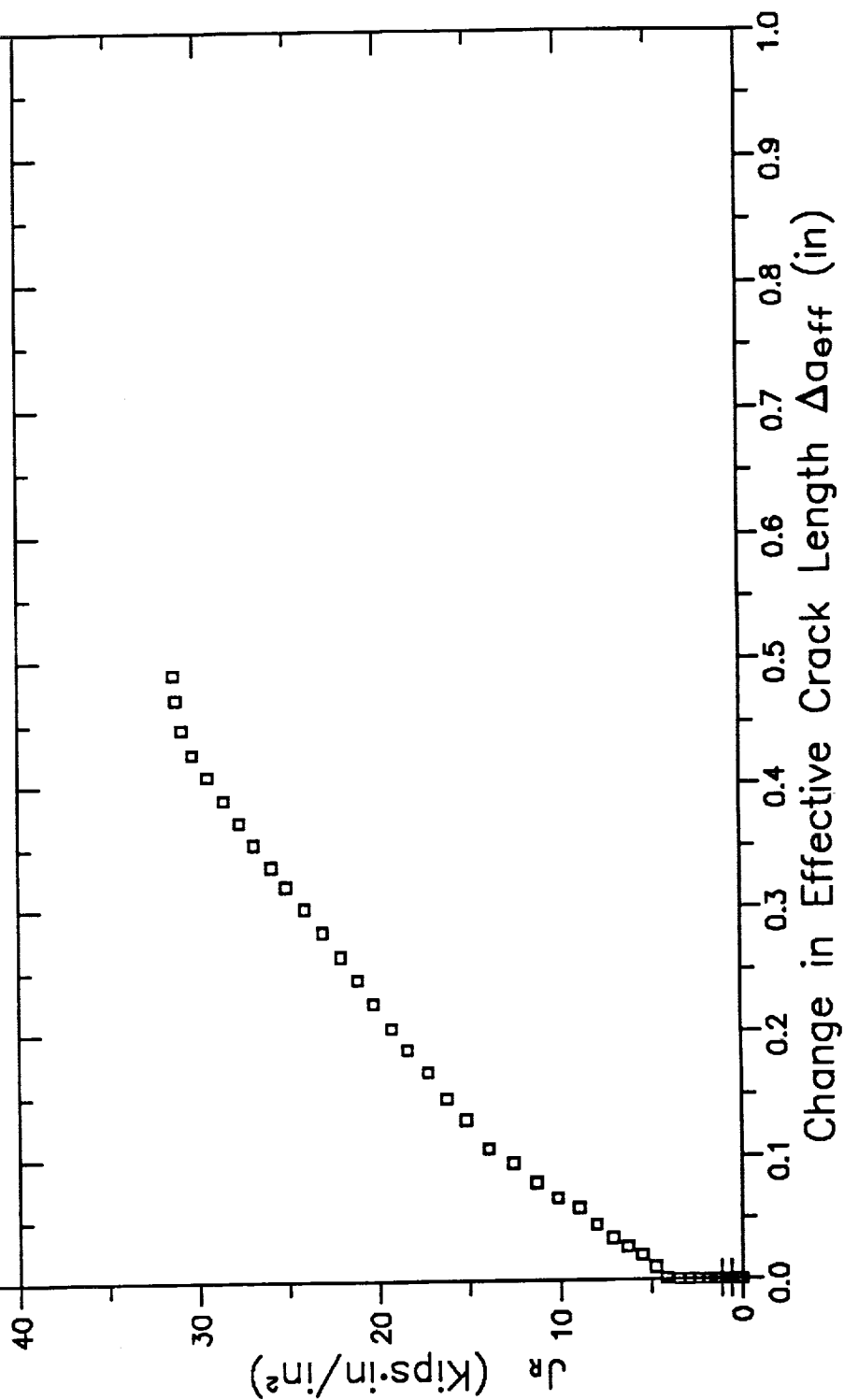


# RESISTANCE CURVE

SA358 TYPE 304

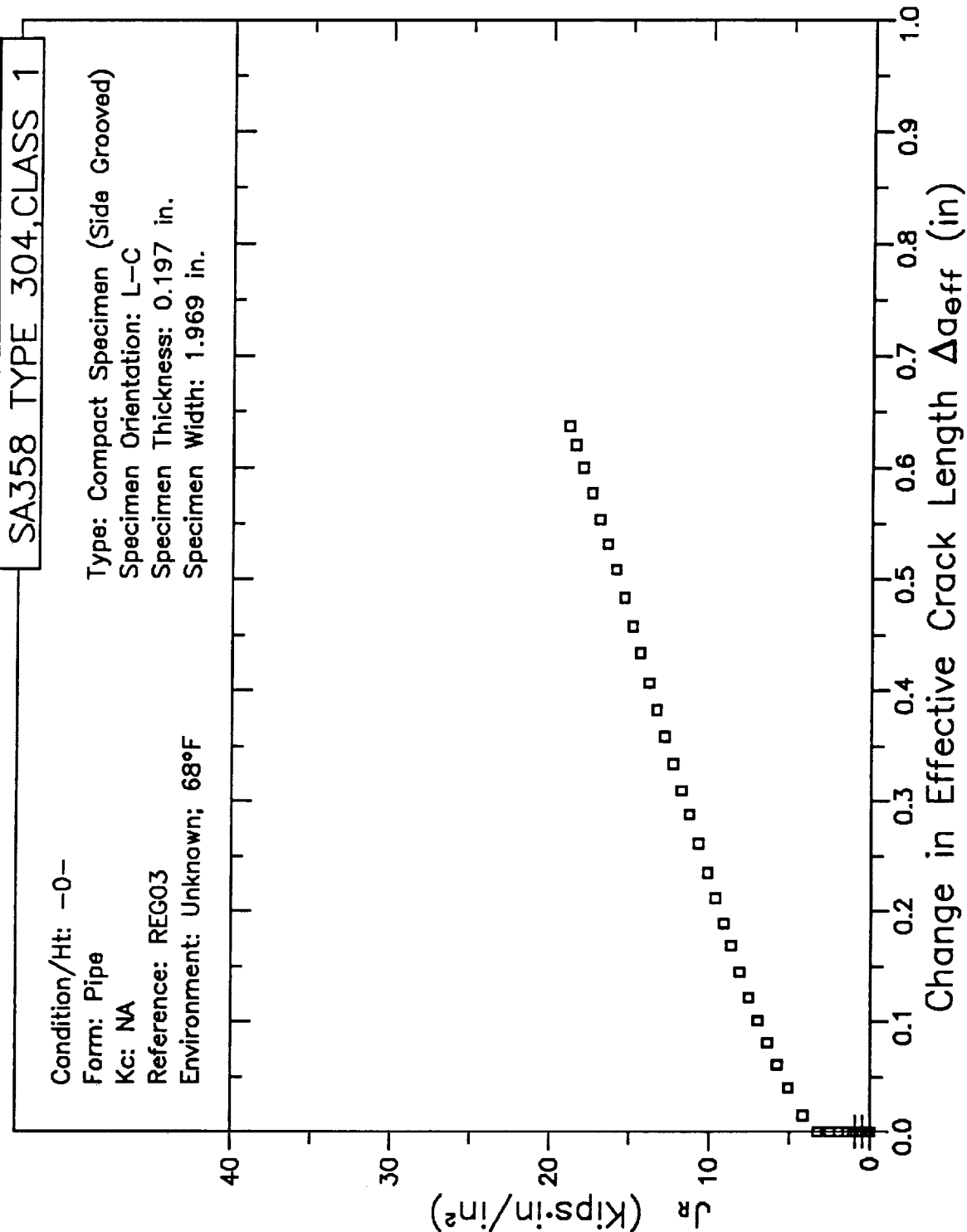
Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG03  
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 0.866 in.  
Specimen Width: 1.969 in.



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# RESISTANCE CURVE

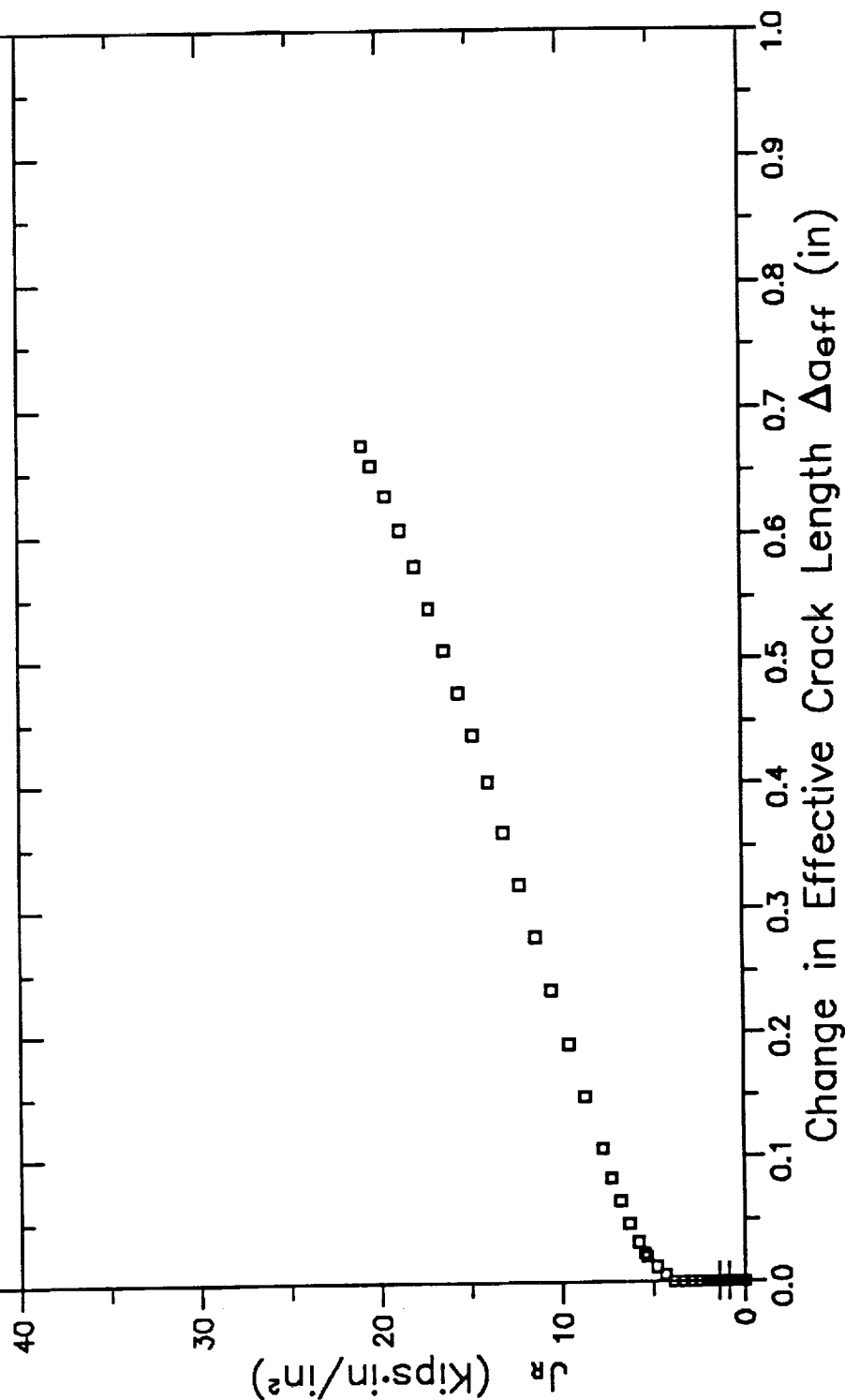


# RESISTANCE CURVE

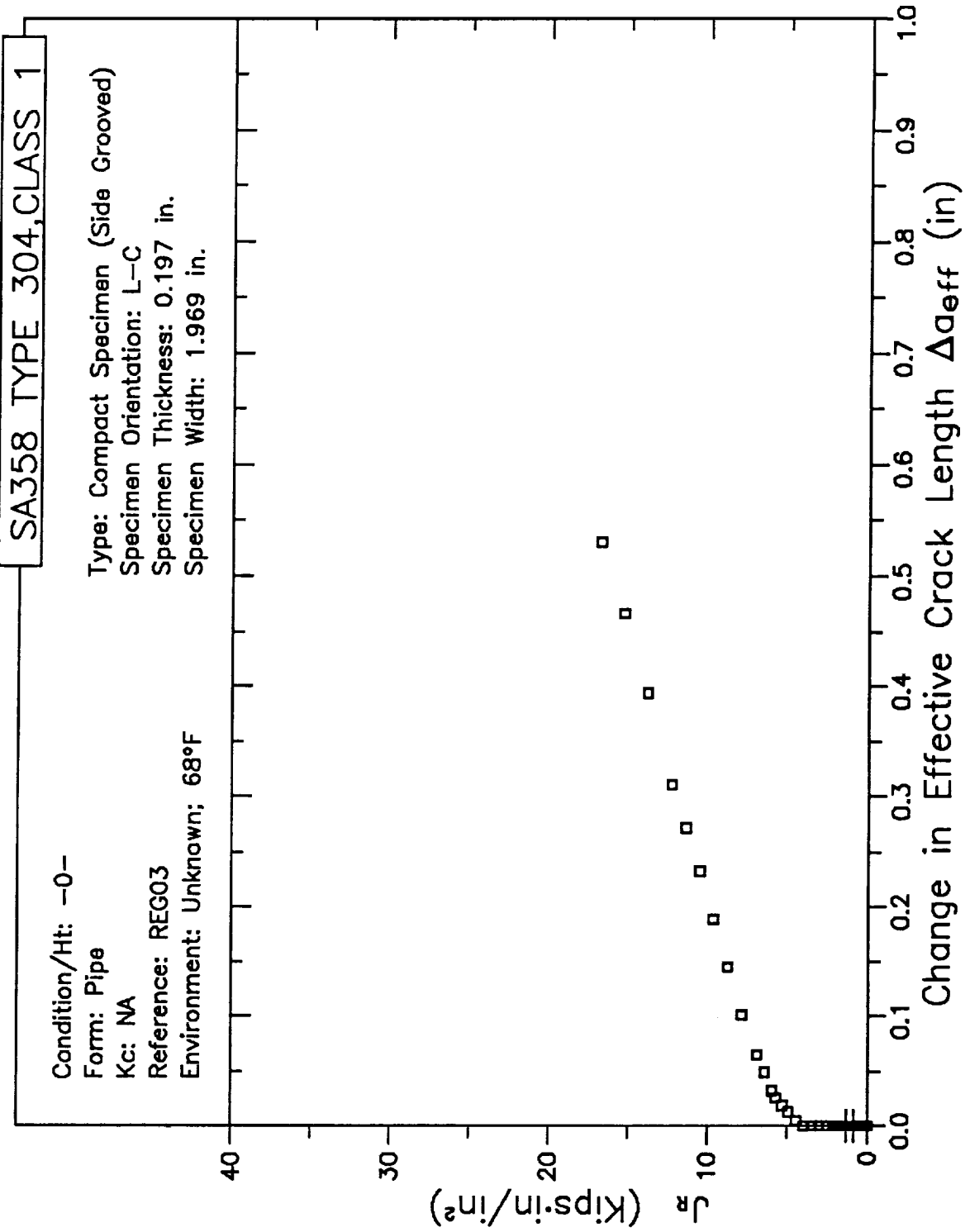
SA358 TYPE 304, CLASS 1

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG03  
Environment: Unknown; 68°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 0.197 in.  
Specimen Width: 1.969 in.



# RESISTANCE CURVE

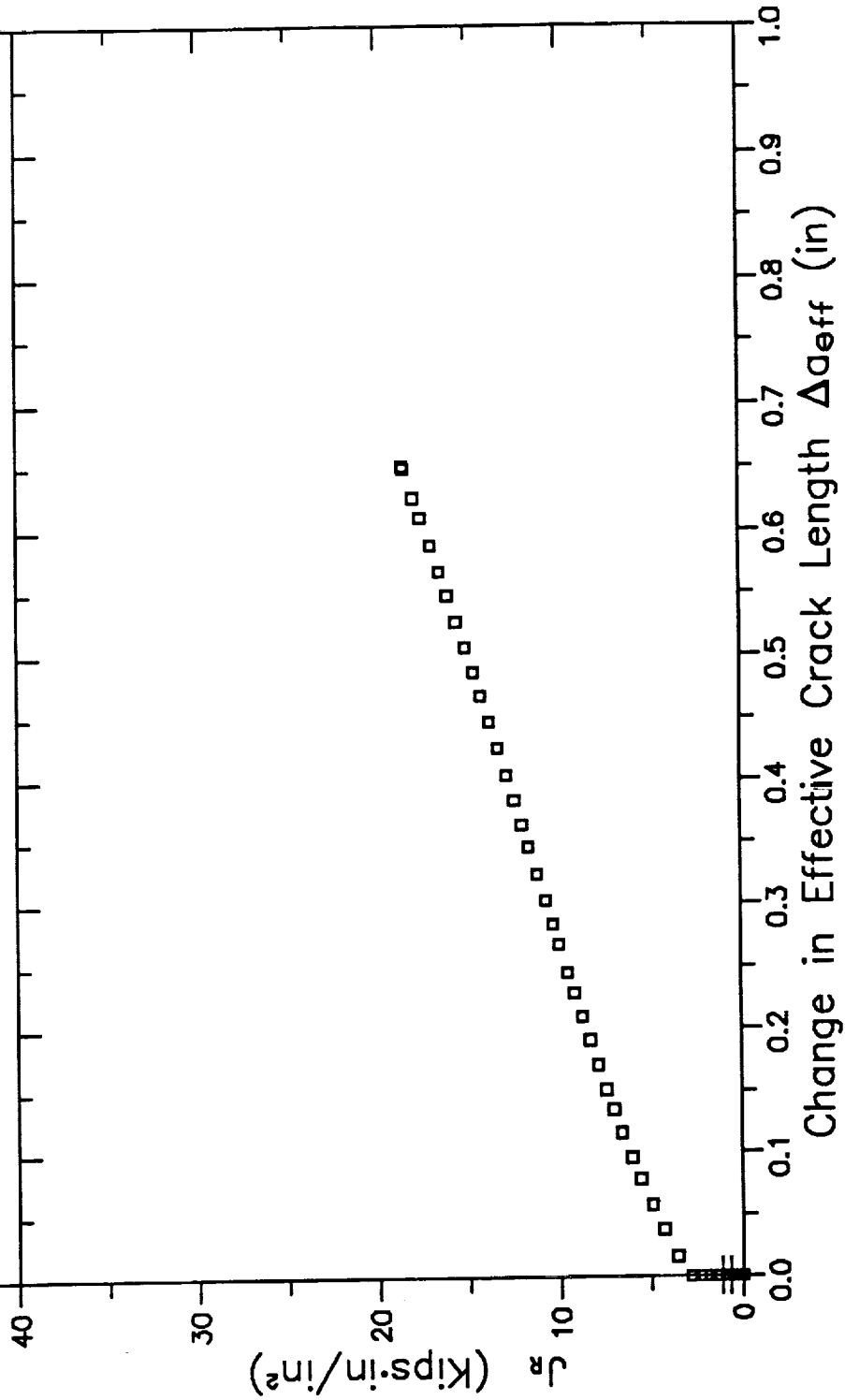


# RESISTANCE CURVE

SA358 TYPE 304, CLASS 1

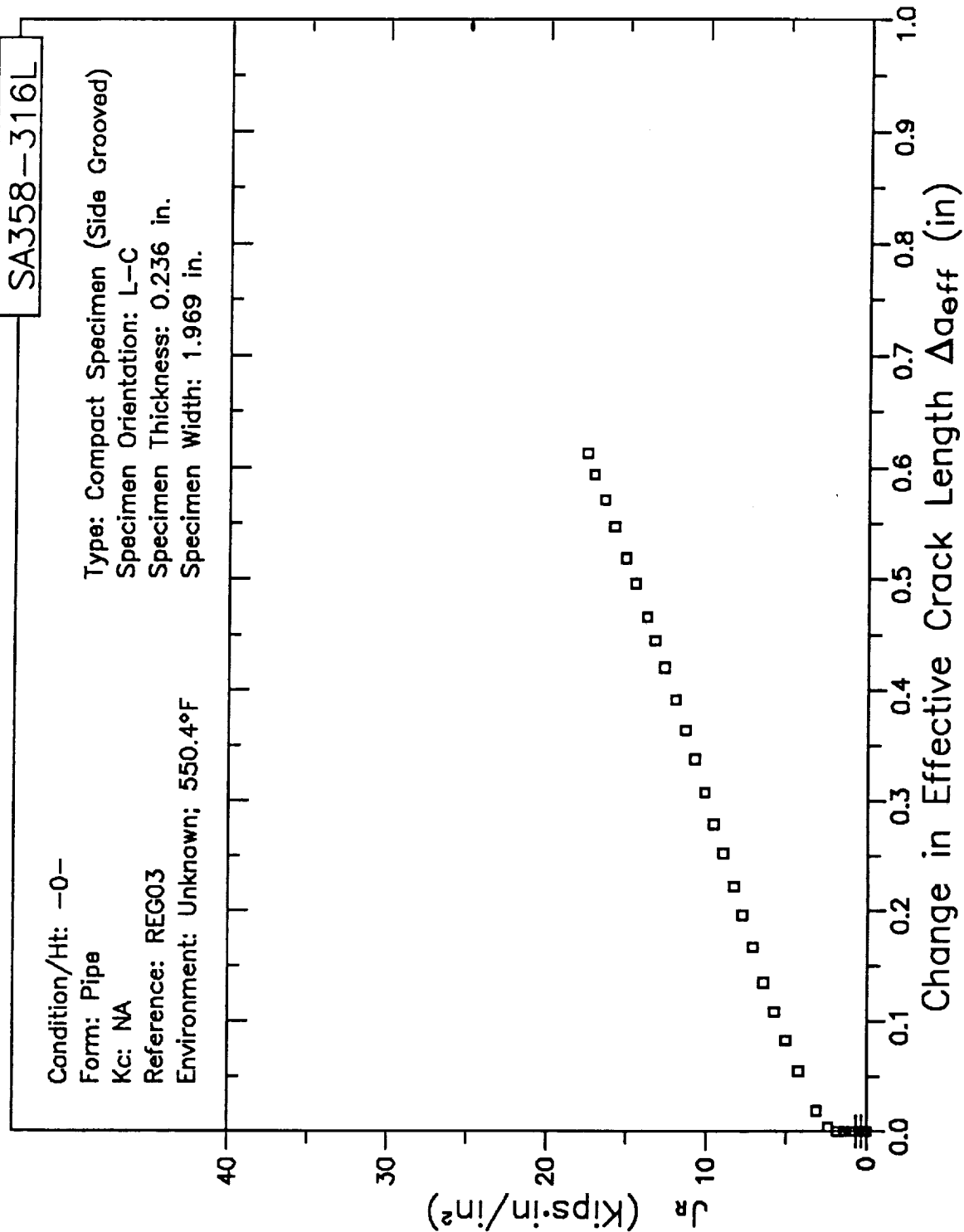
Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG03  
Environment: Unknown; 68°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 0.197 in.  
Specimen Width: 1.969 in.





# RESISTANCE CURVE

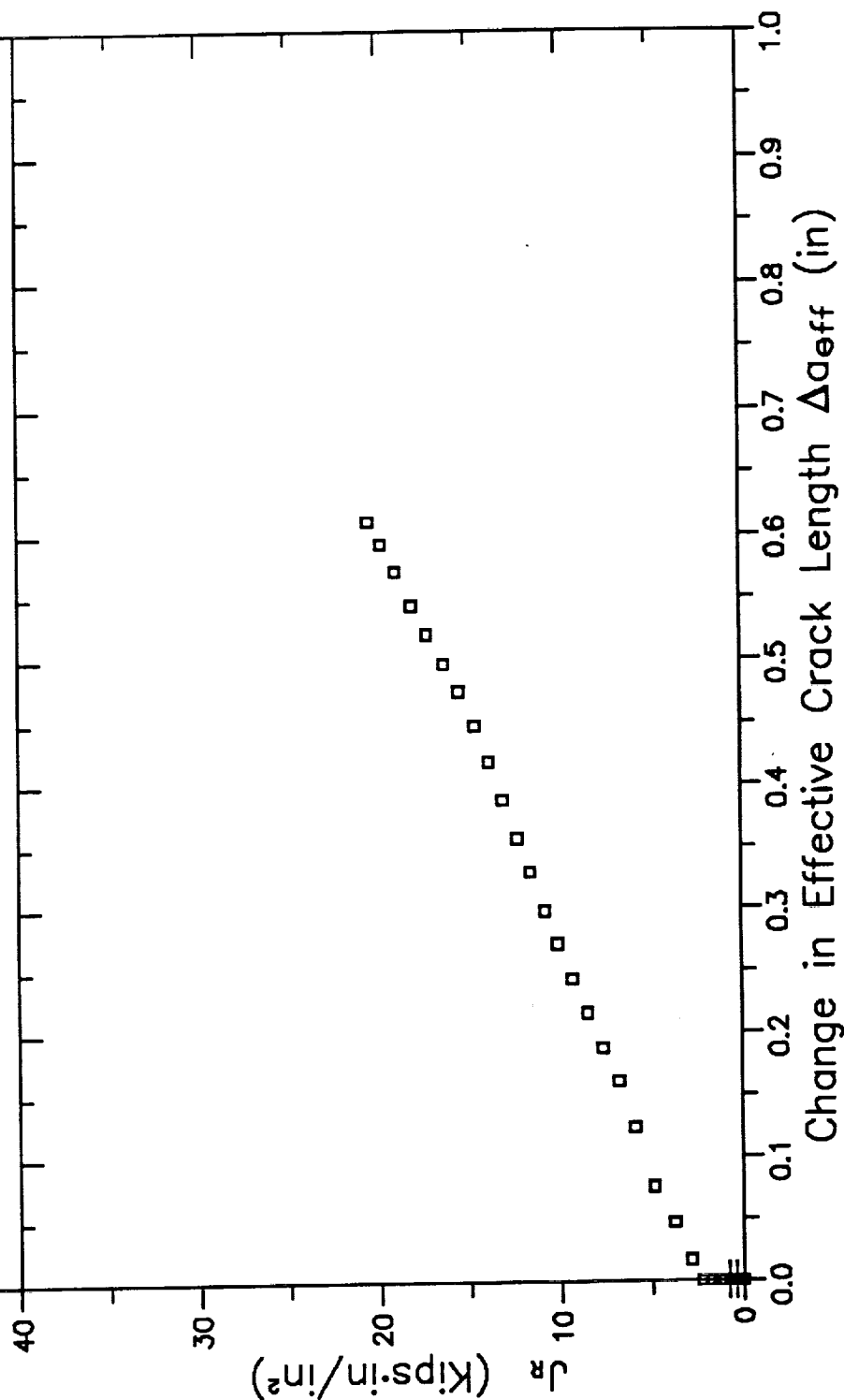


# RESISTANCE CURVE

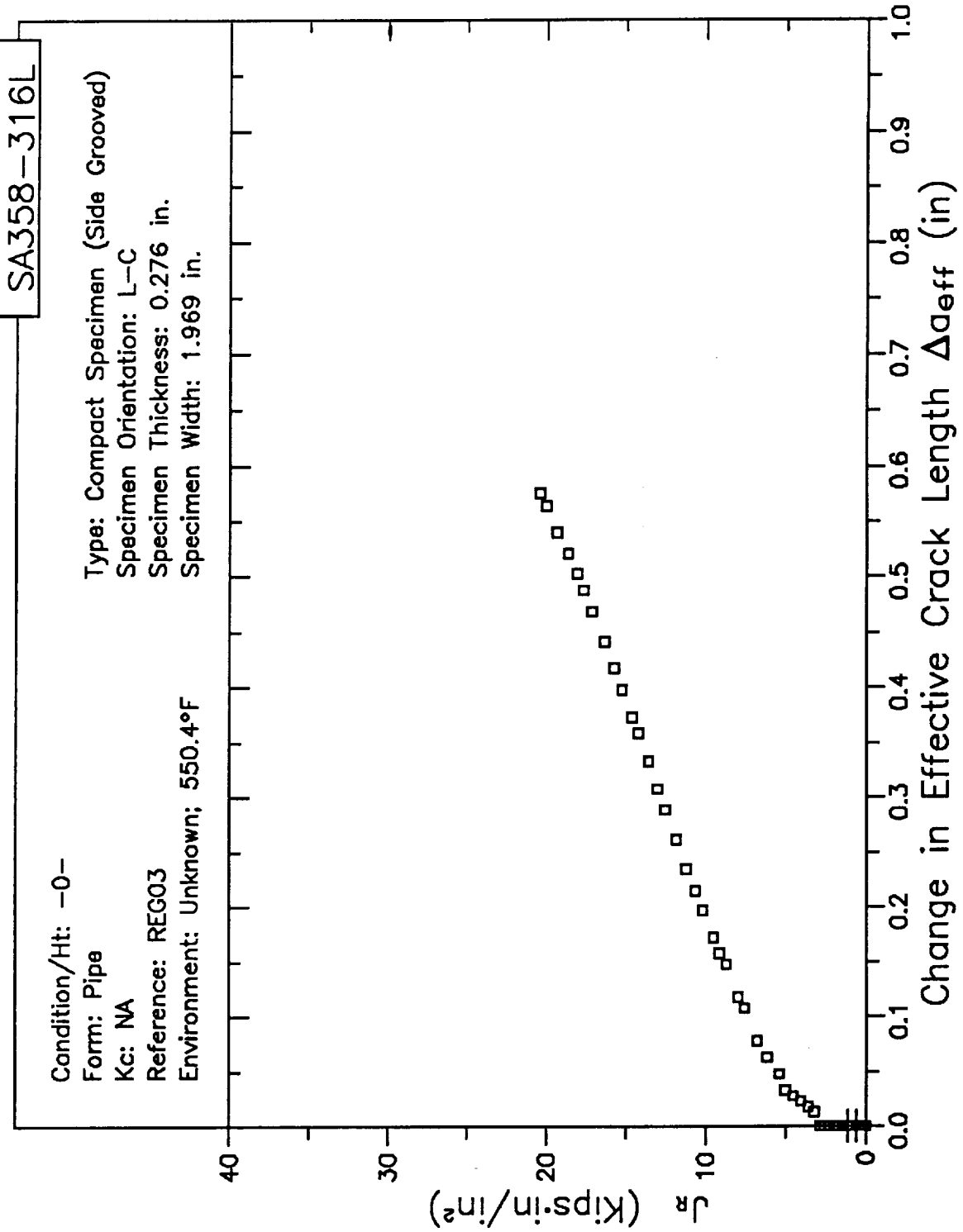
SA358-316L

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG03  
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 0.236 in.  
Specimen Width: 1.969 in.



# RESISTANCE CURVE

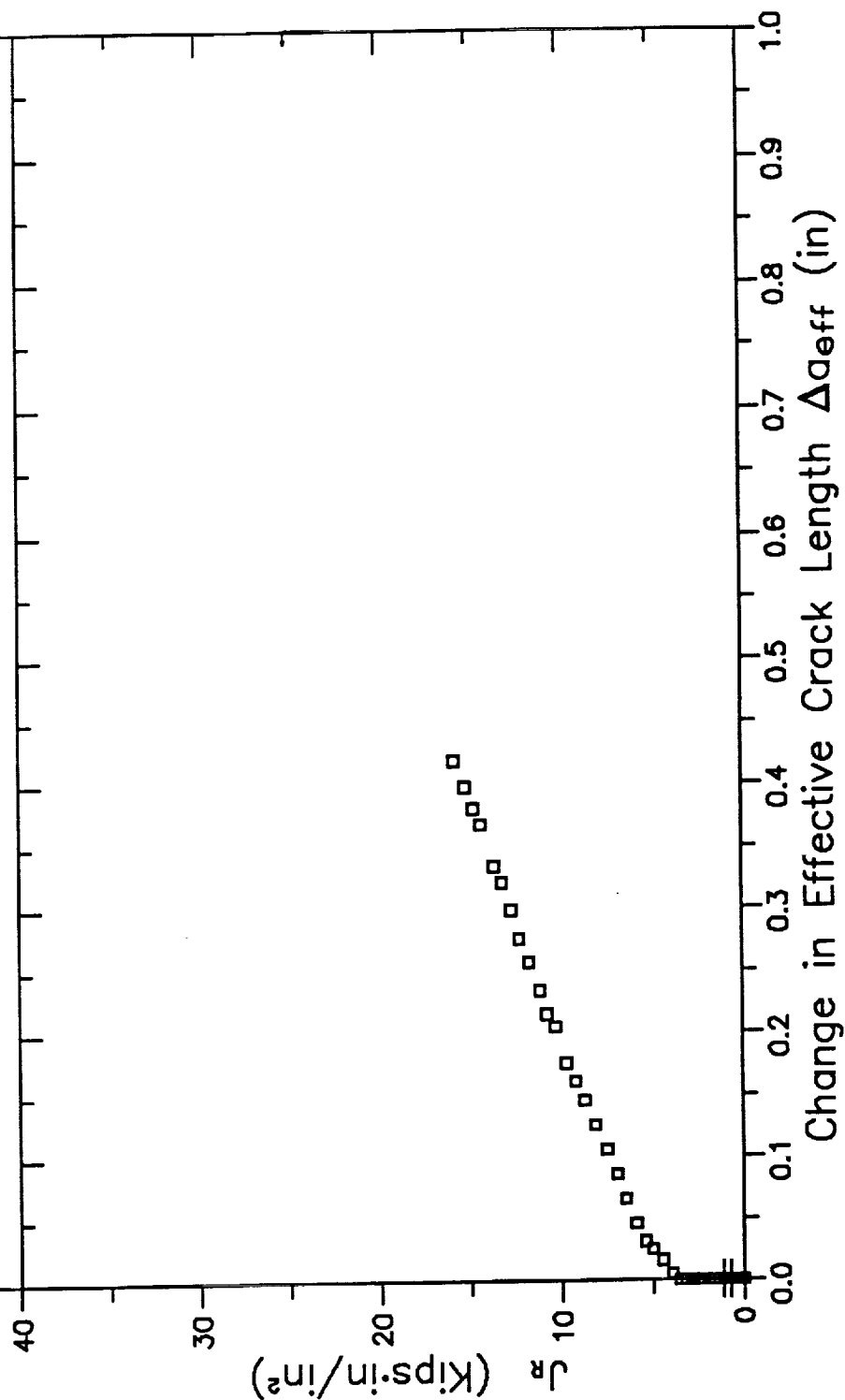


# RESISTANCE CURVE

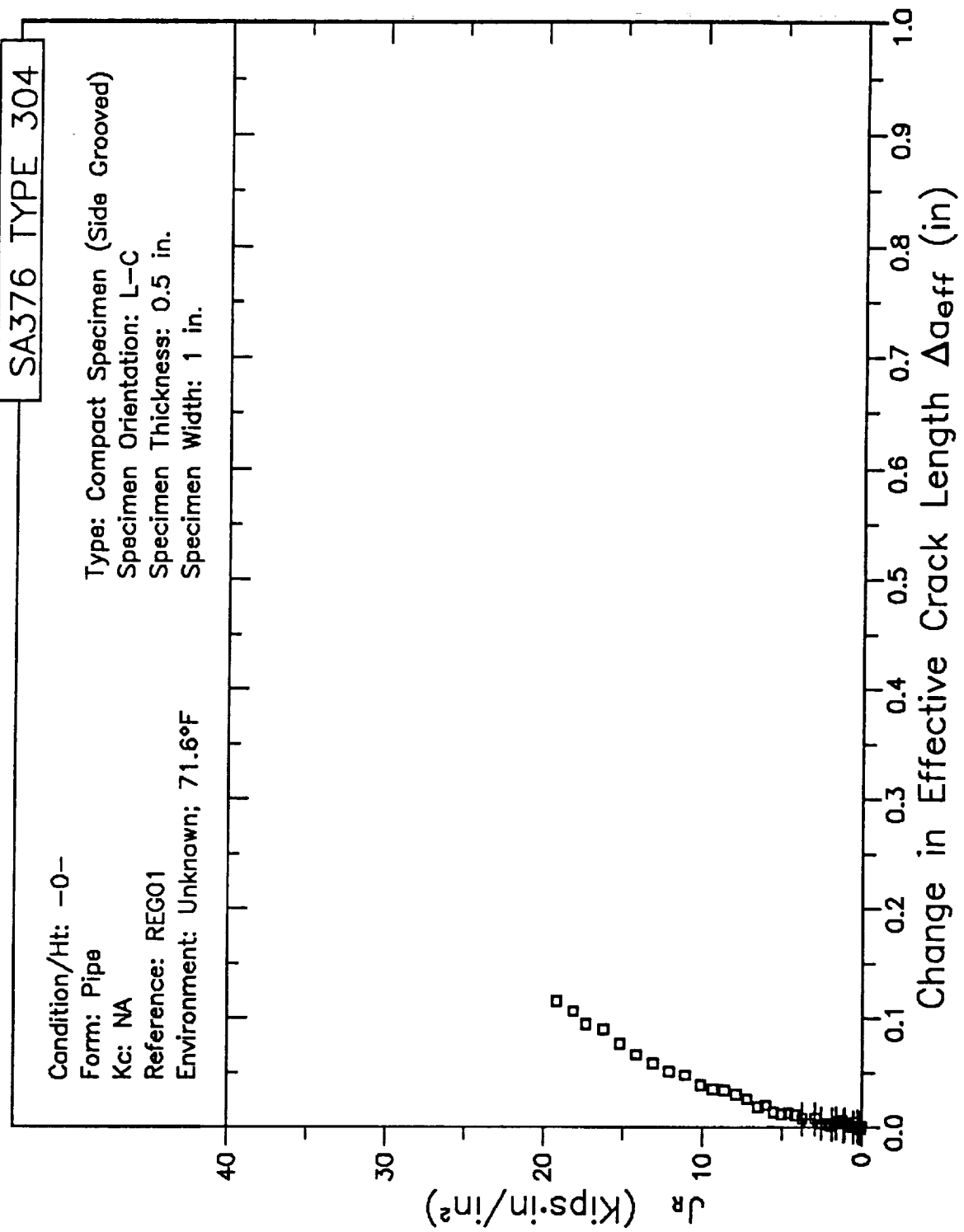
SA358-316L

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG03  
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 0.276 in.  
Specimen Width: 1.969 in.



# RESISTANCE CURVE

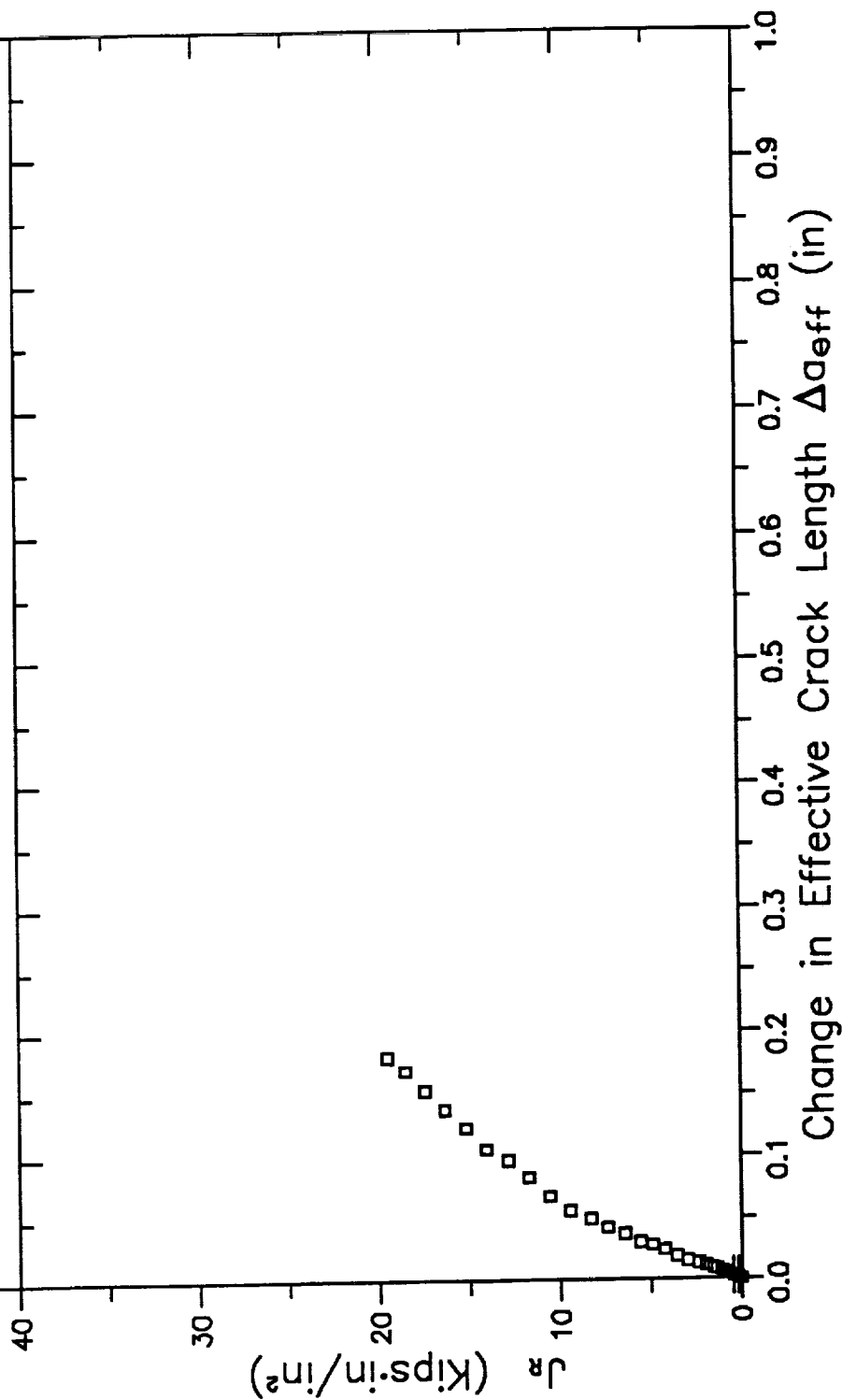


# RESISTANCE CURVE

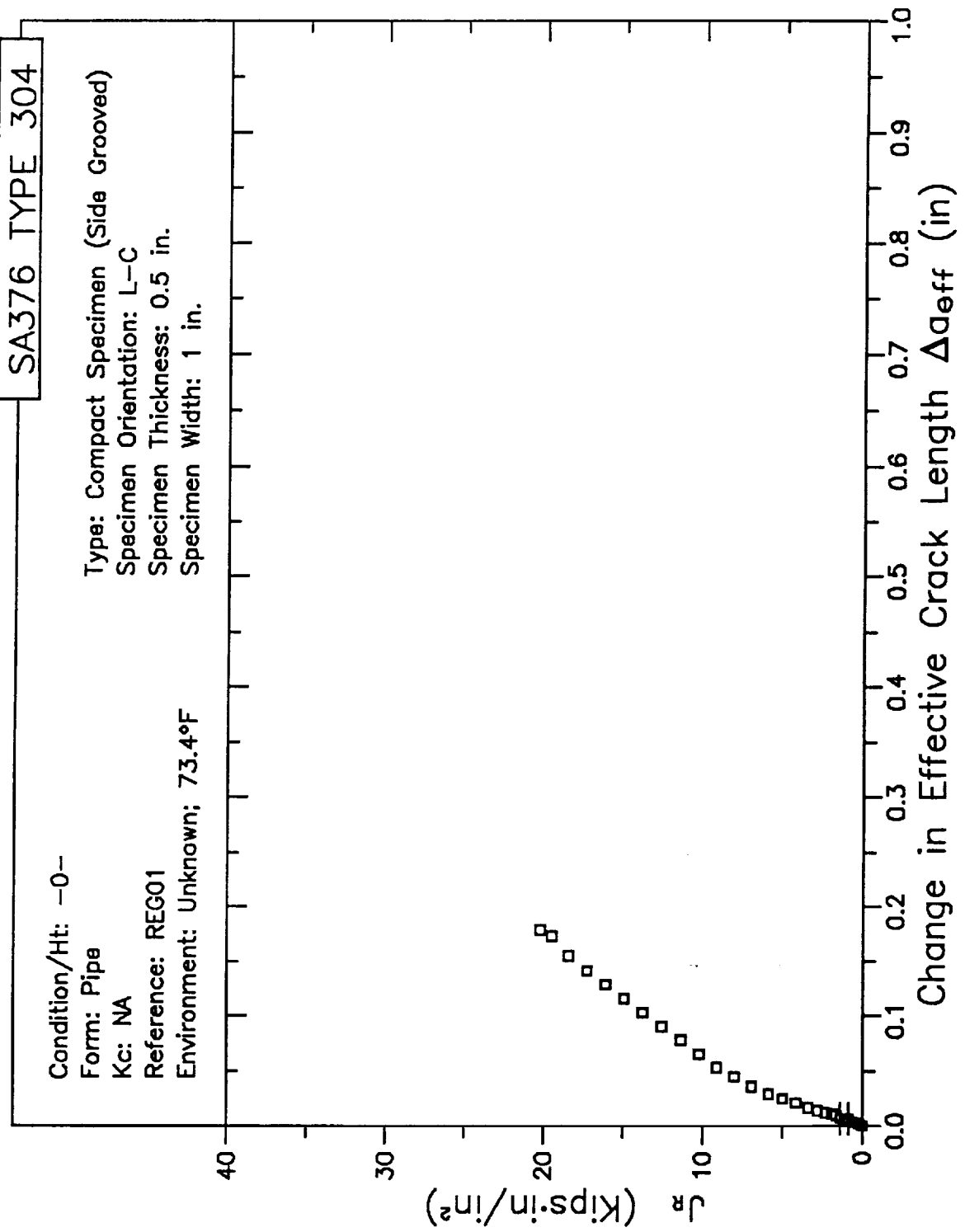
SA376 TYPE 304

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG01  
Environment: Unknown; 71.6°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 0.5 in.  
Specimen Width: 1 in.



# RESISTANCE CURVE

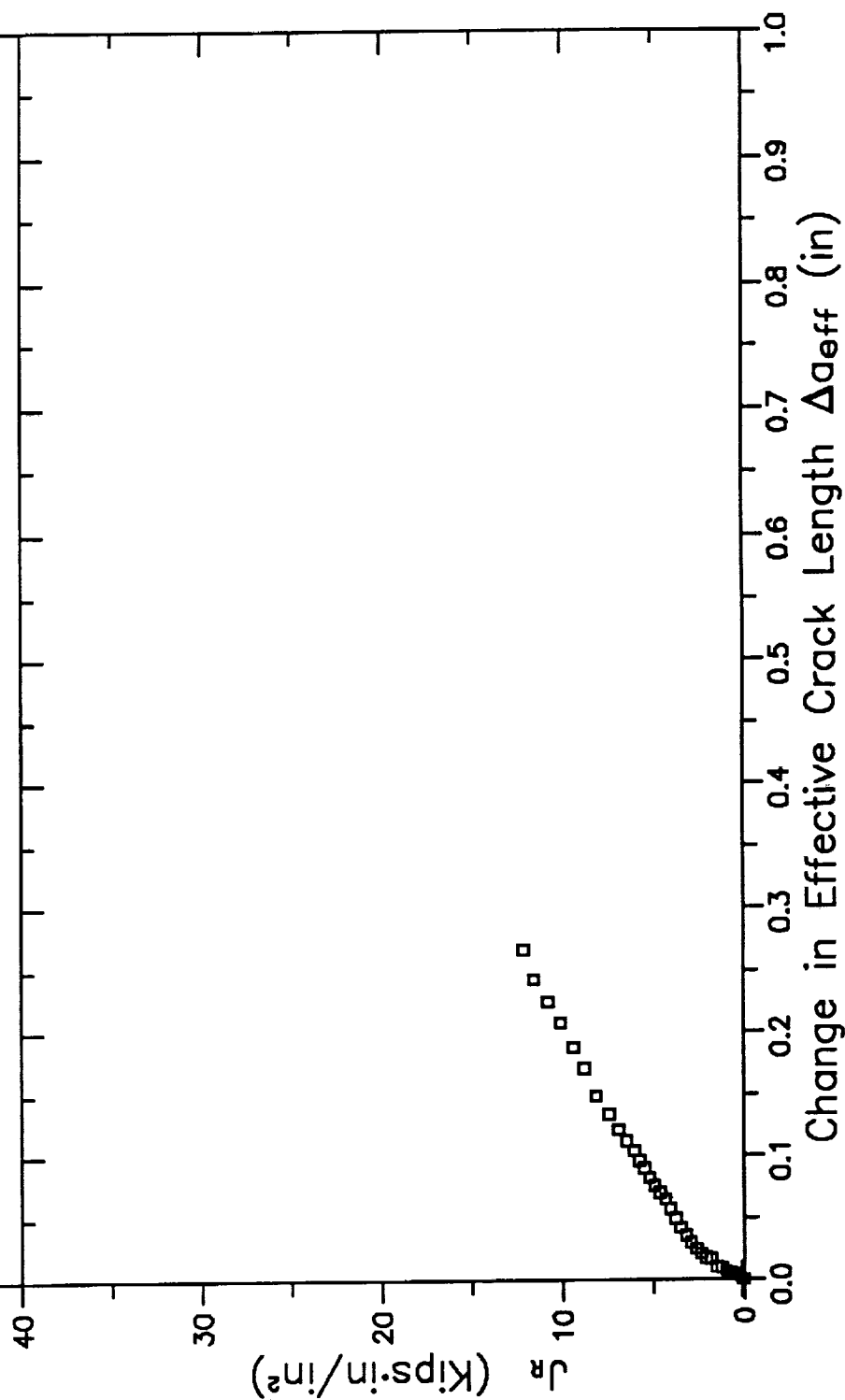


# RESISTANCE CURVE

SA376 TYPE 304

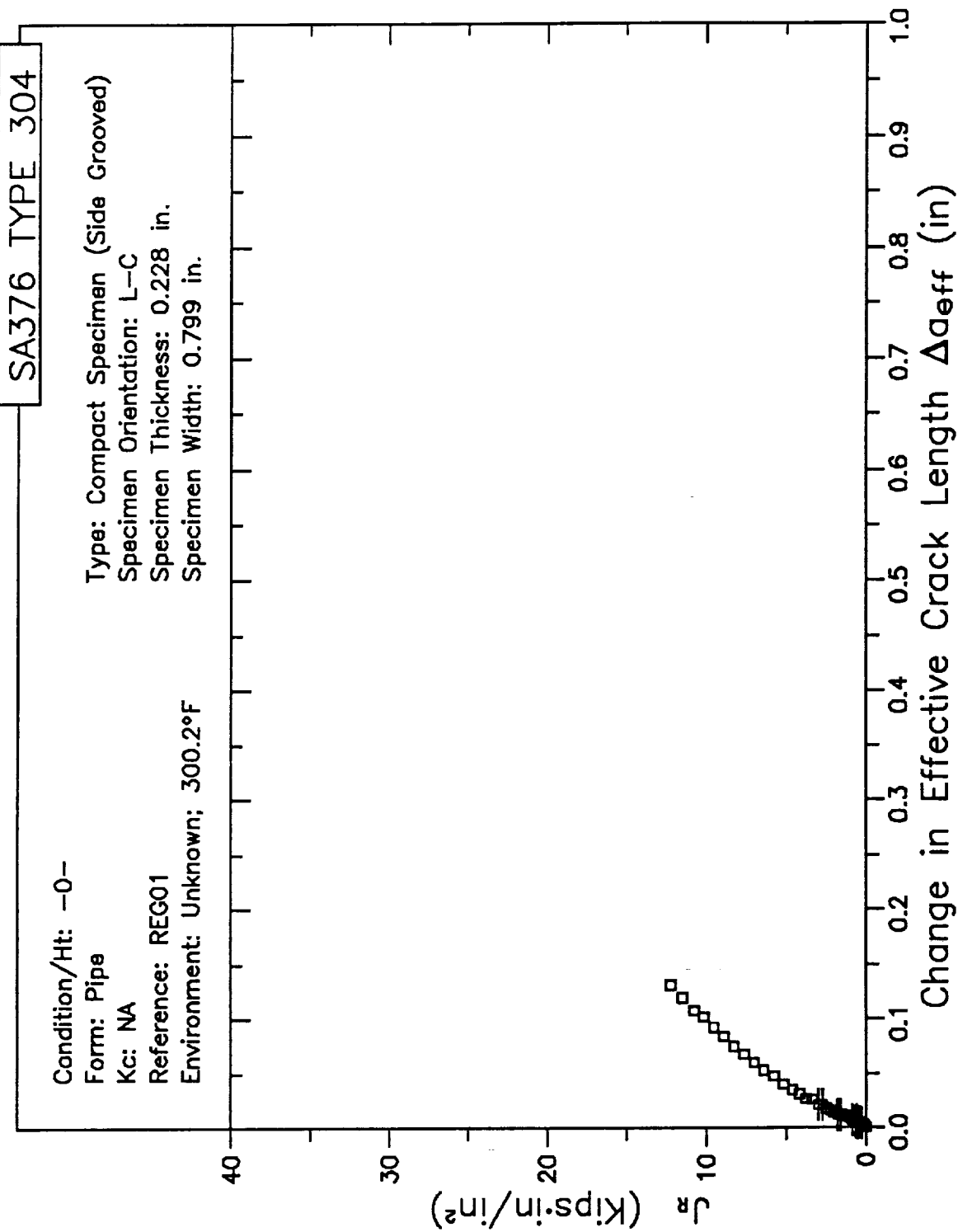
Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG01  
Environment: Unknown; 73.4°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: C-L  
Specimen Thickness: 0.5 in.  
Specimen Width: 1 in.

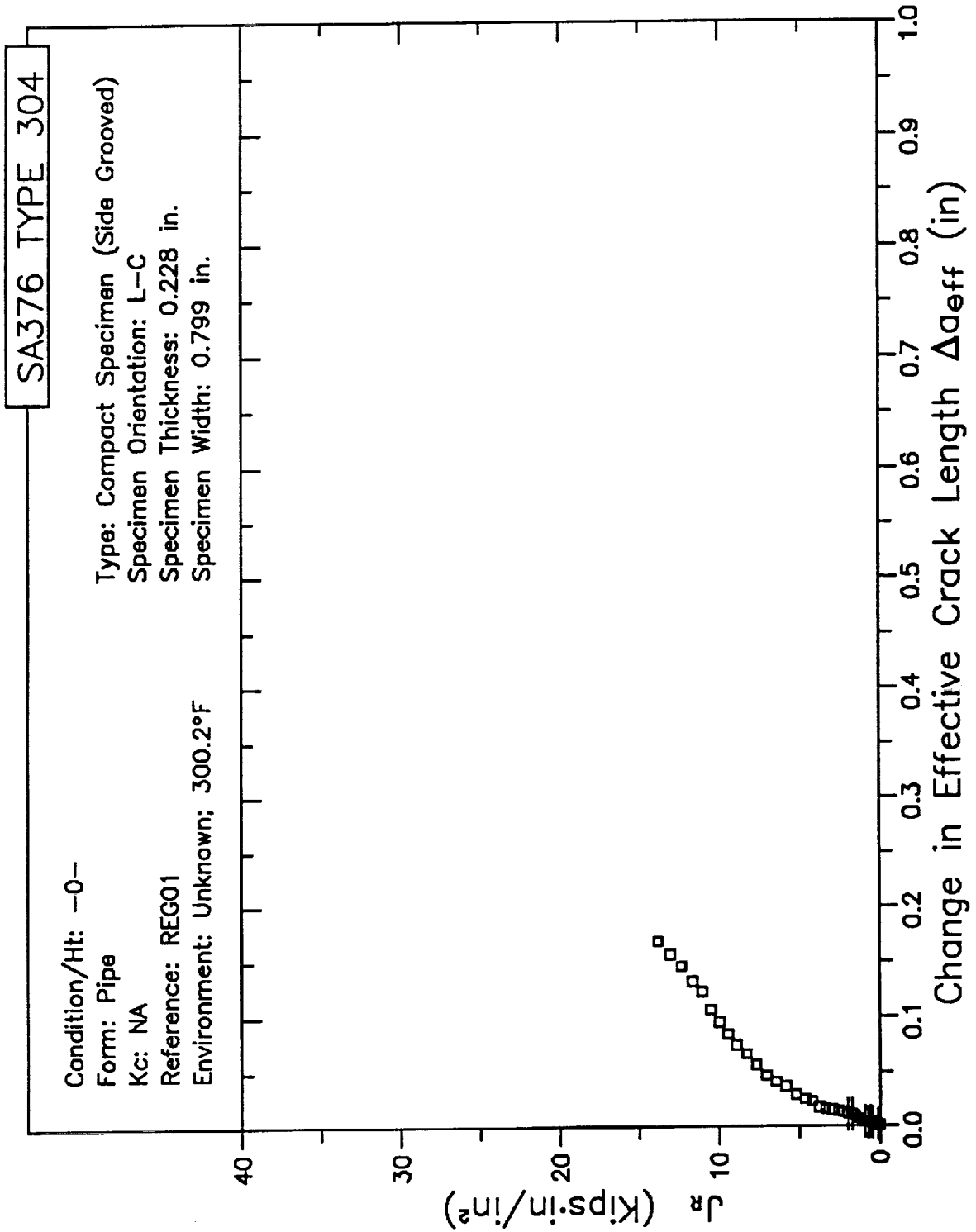




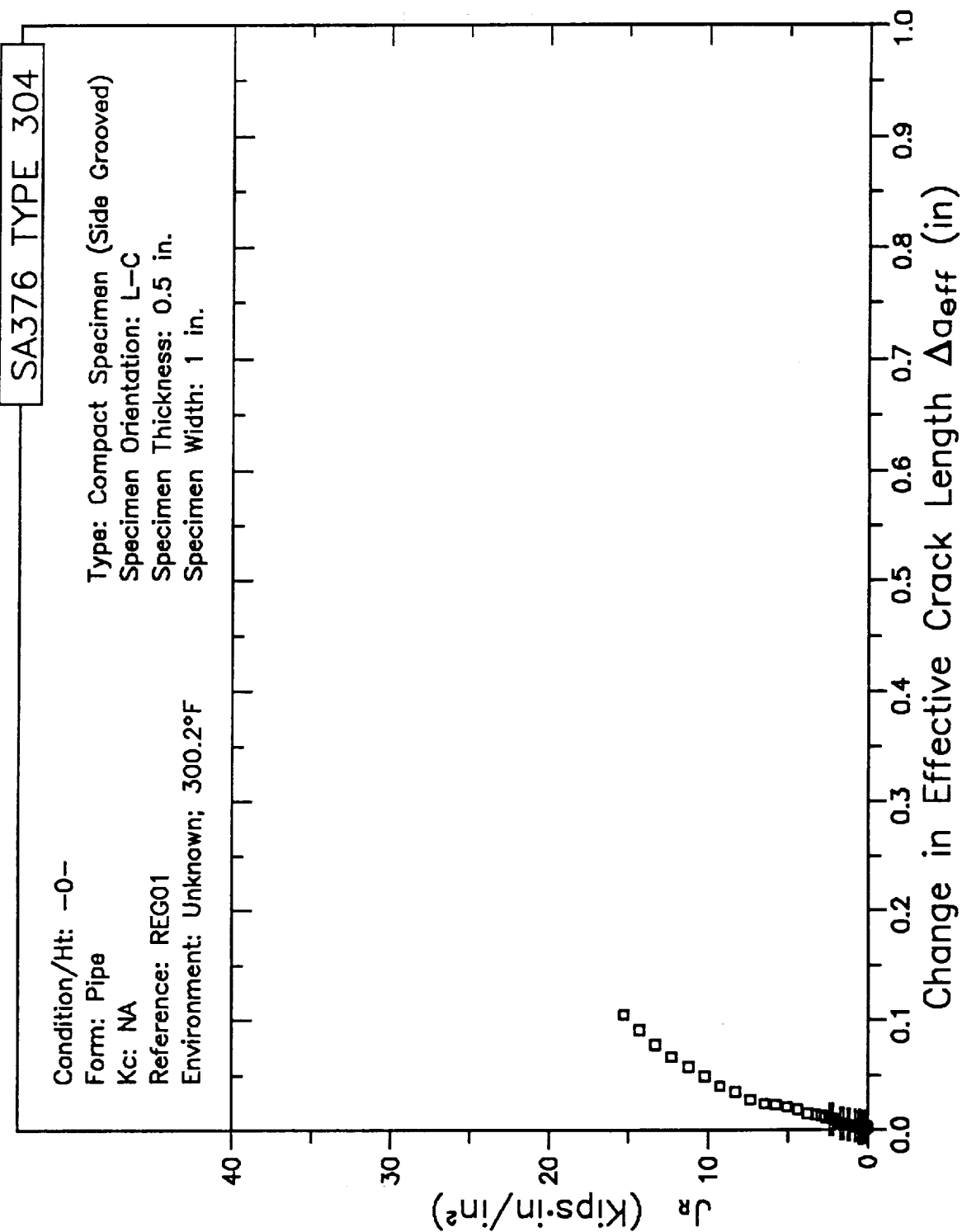
# RESISTANCE CURVE



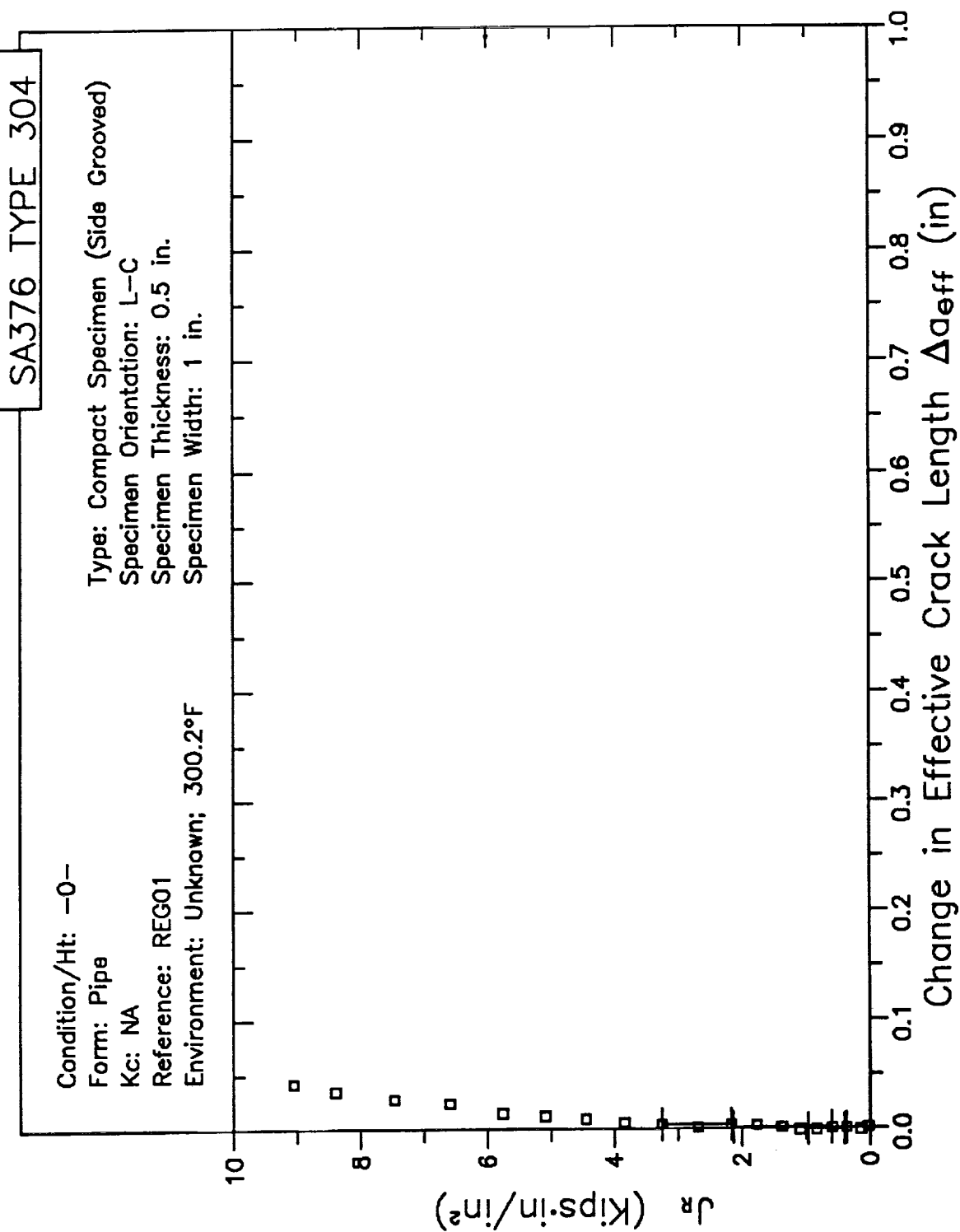
# RESISTANCE CURVE



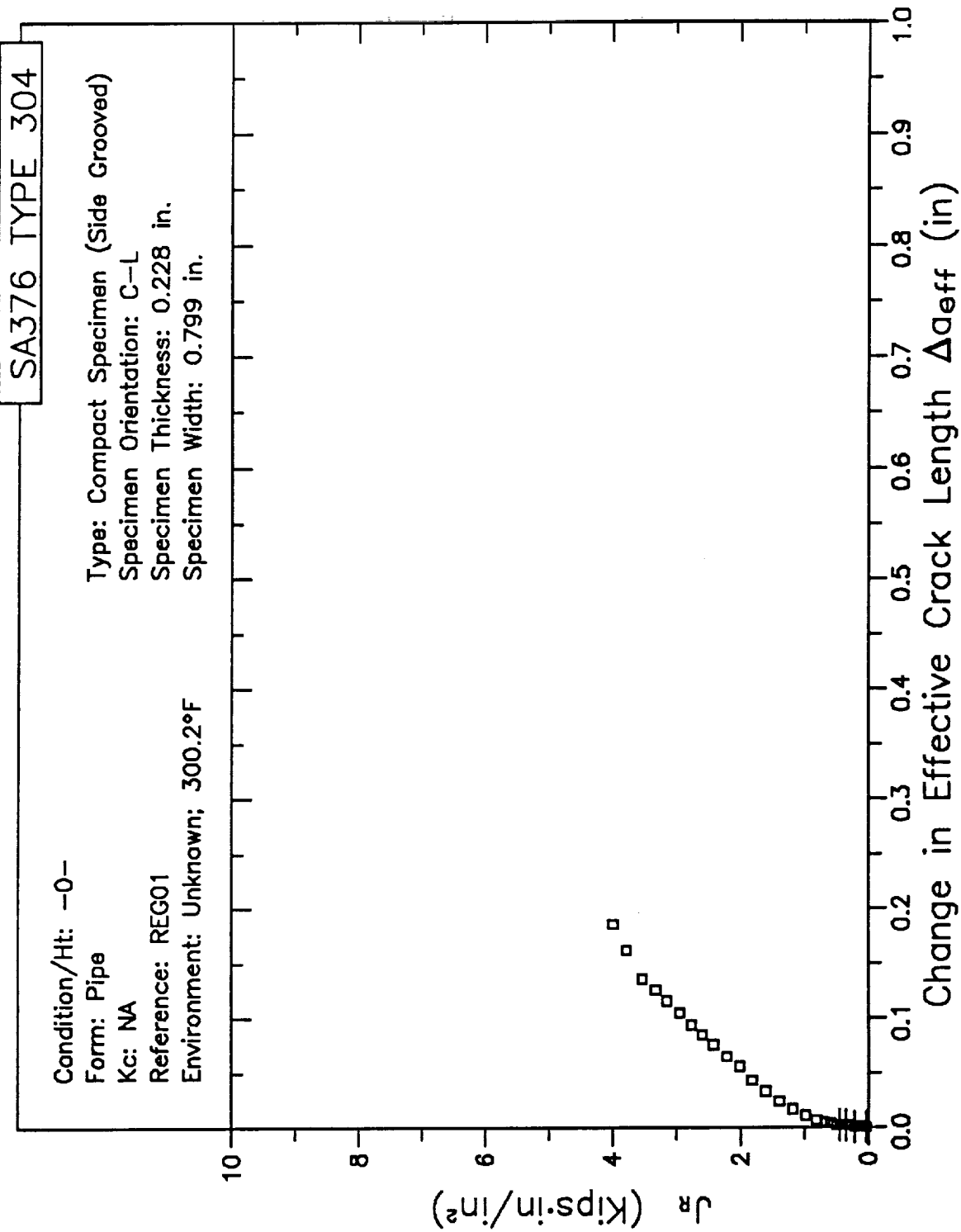
# RESISTANCE CURVE



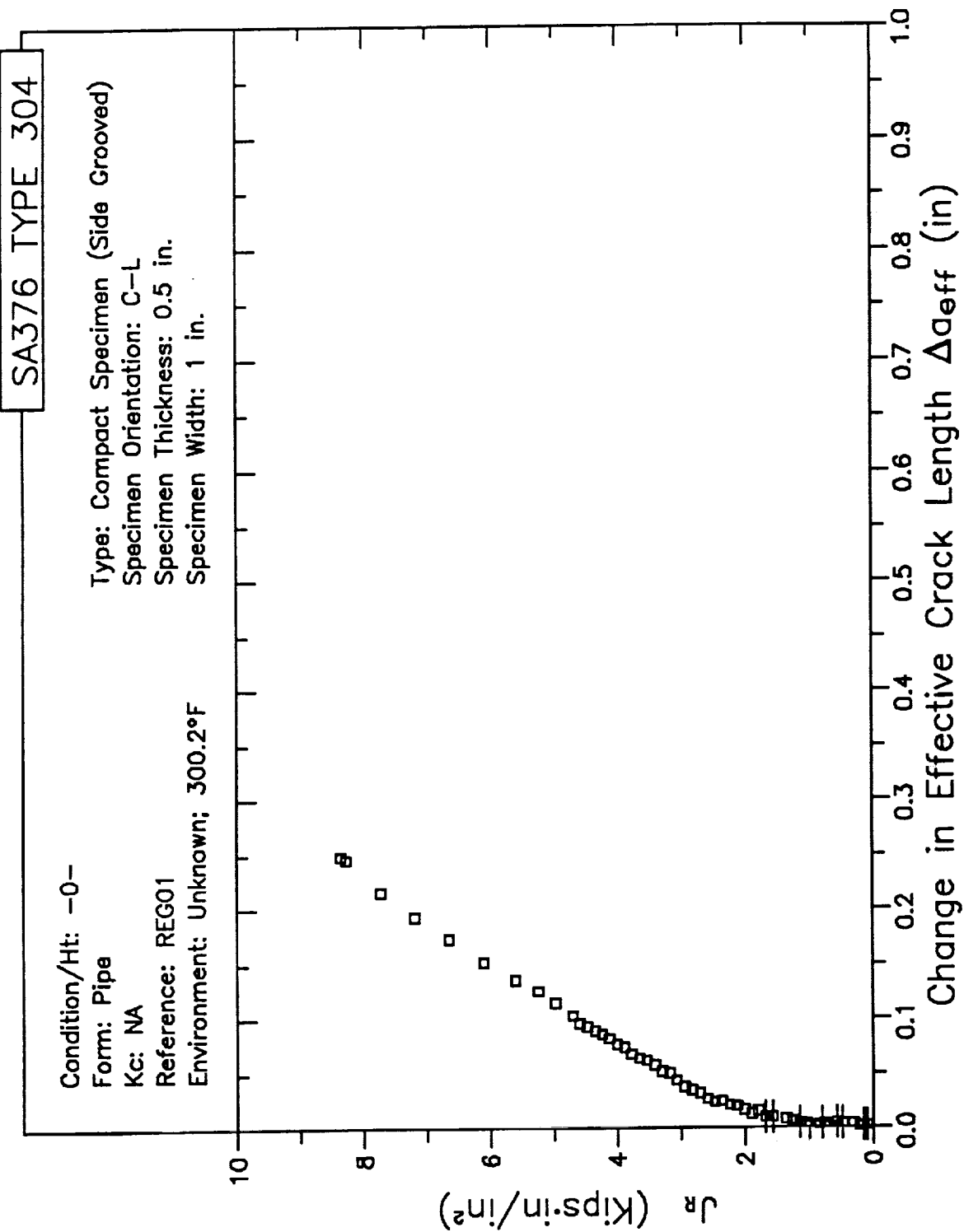
# RESISTANCE CURVE



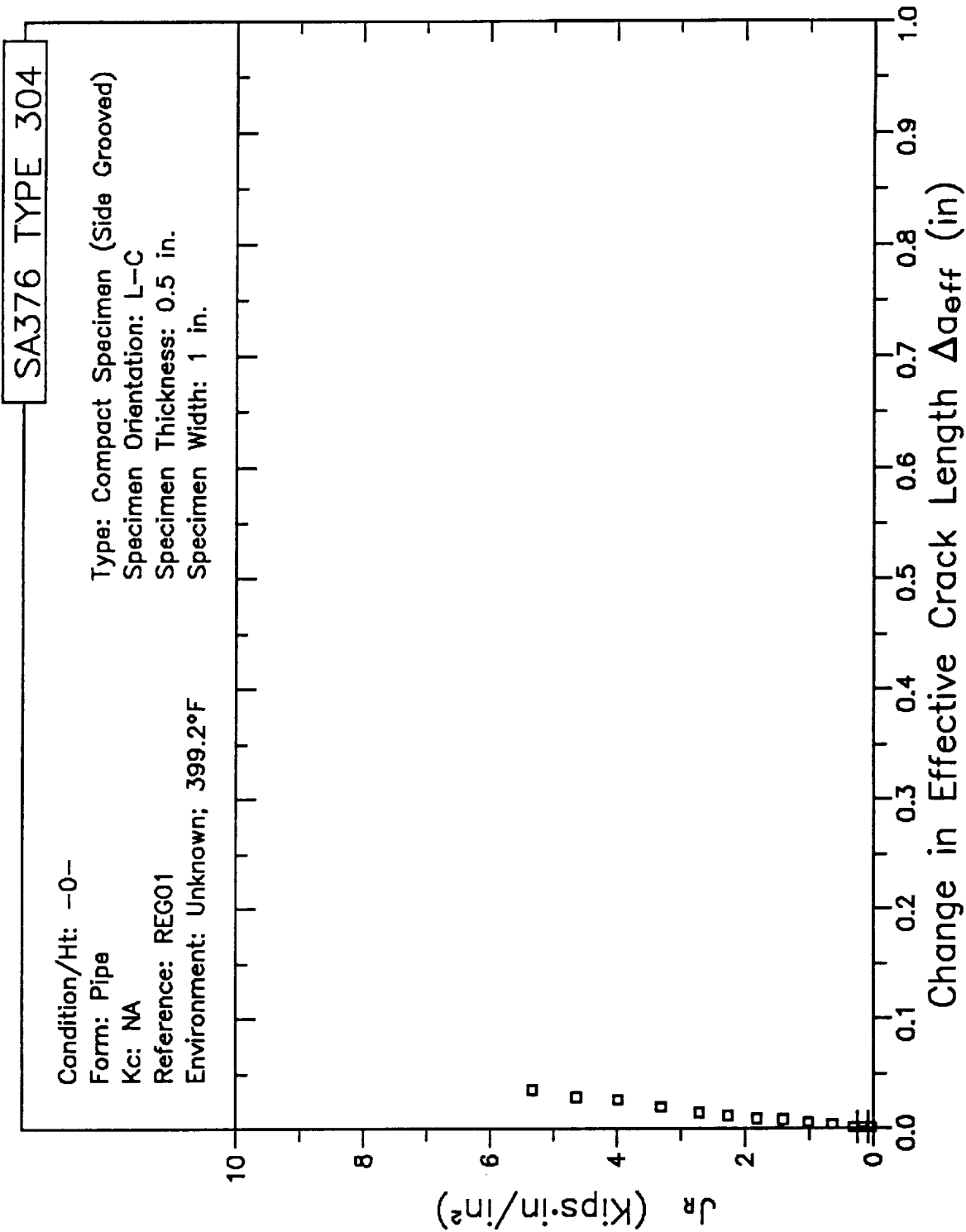
# RESISTANCE CURVE



# RESISTANCE CURVE



RESISTANCE CURVE

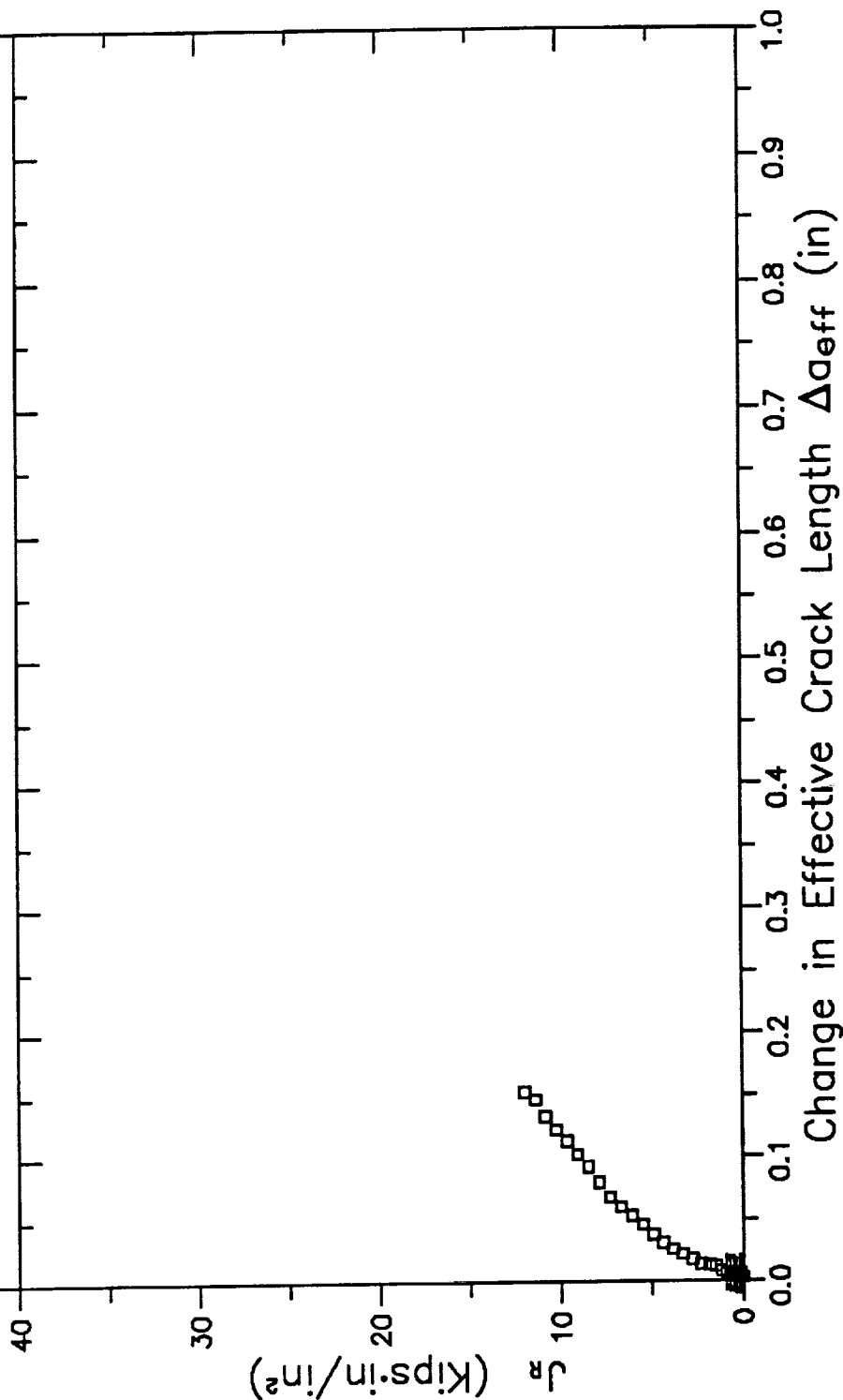


# RESISTANCE CURVE

SA376 TYPE 304

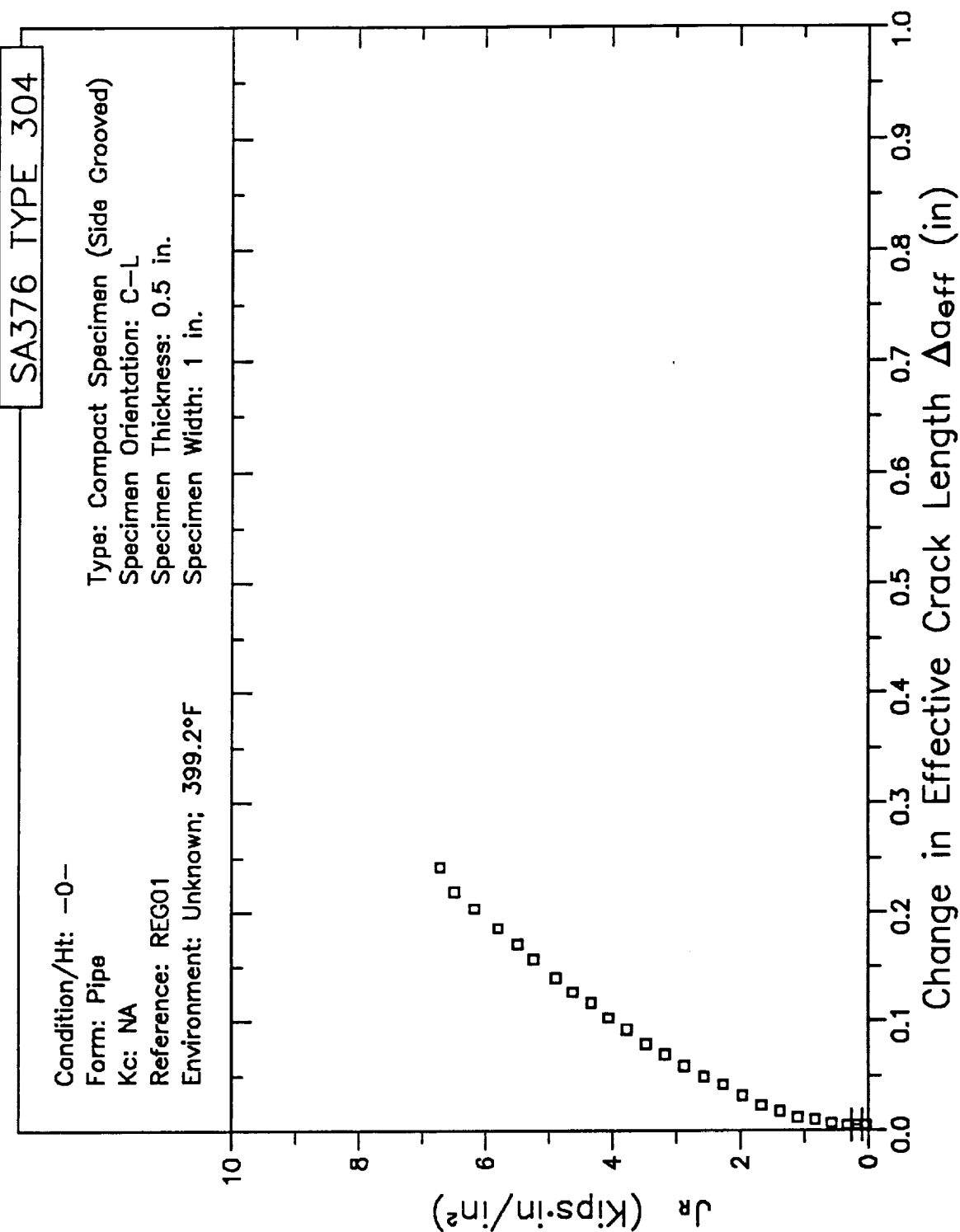
Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG01  
Environment: Unknown; 399.2°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 0.5 in.  
Specimen Width: 1 in.

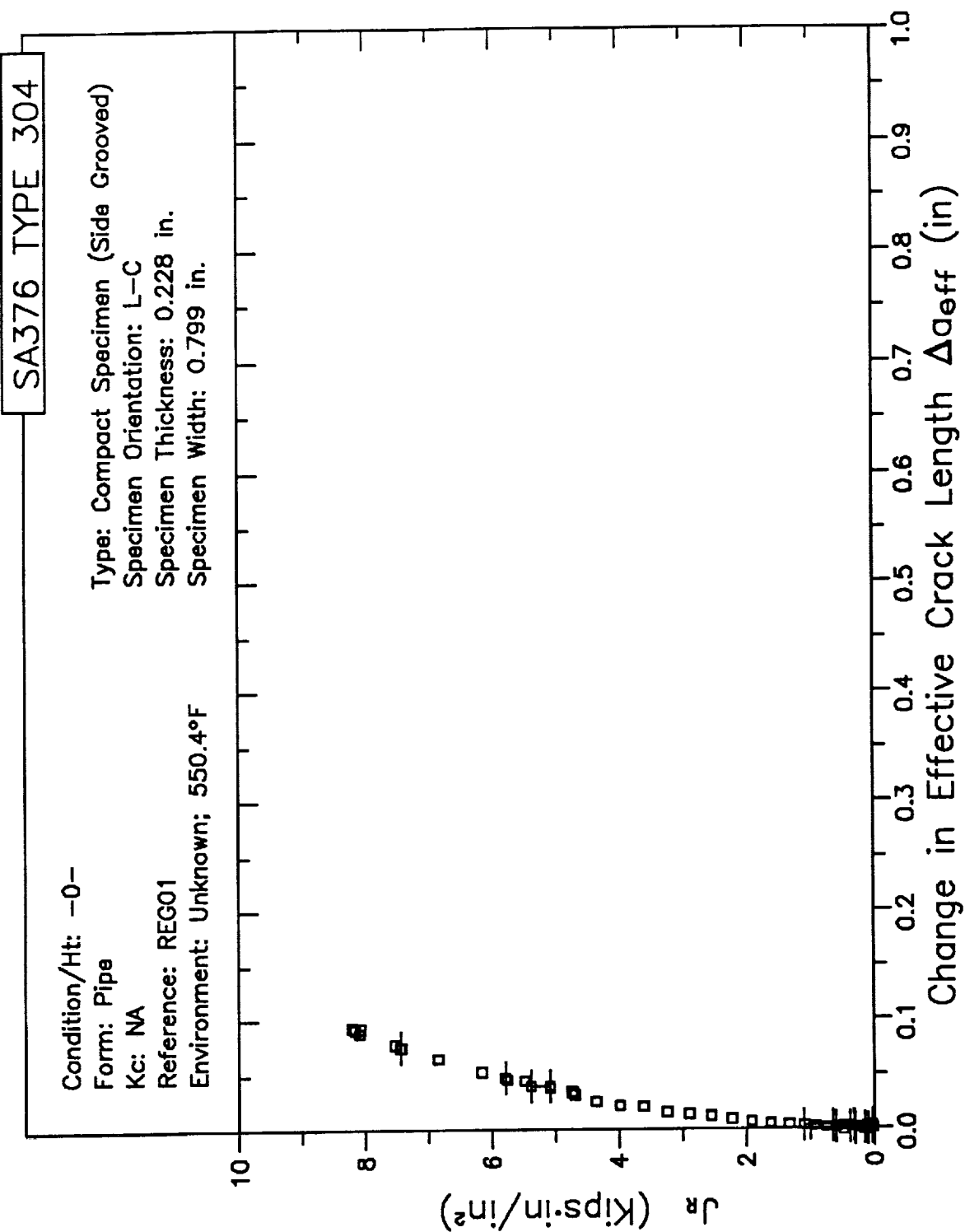




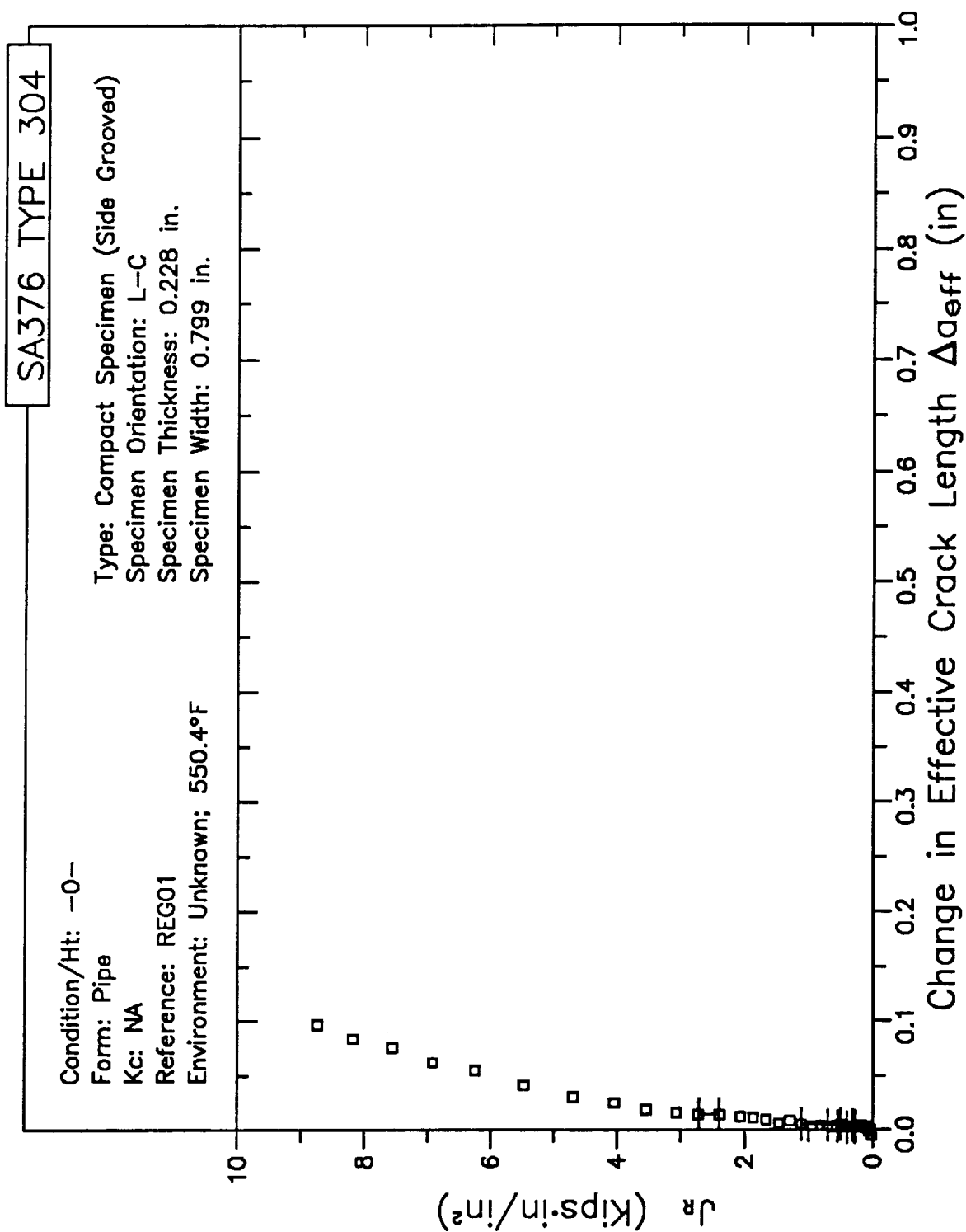
# RESISTANCE CURVE



# RESISTANCE CURVE



# RESISTANCE CURVE

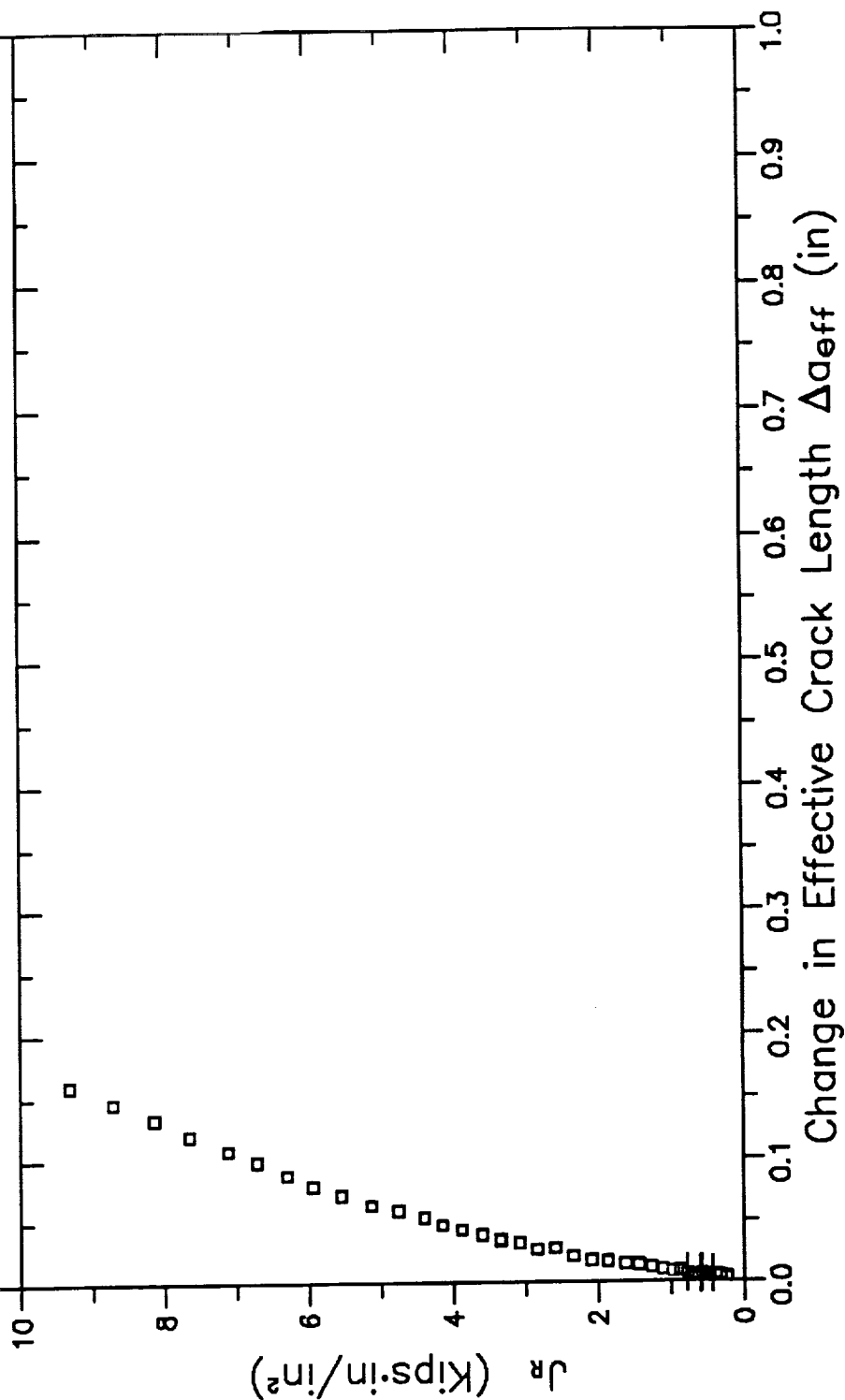


# RESISTANCE CURVE

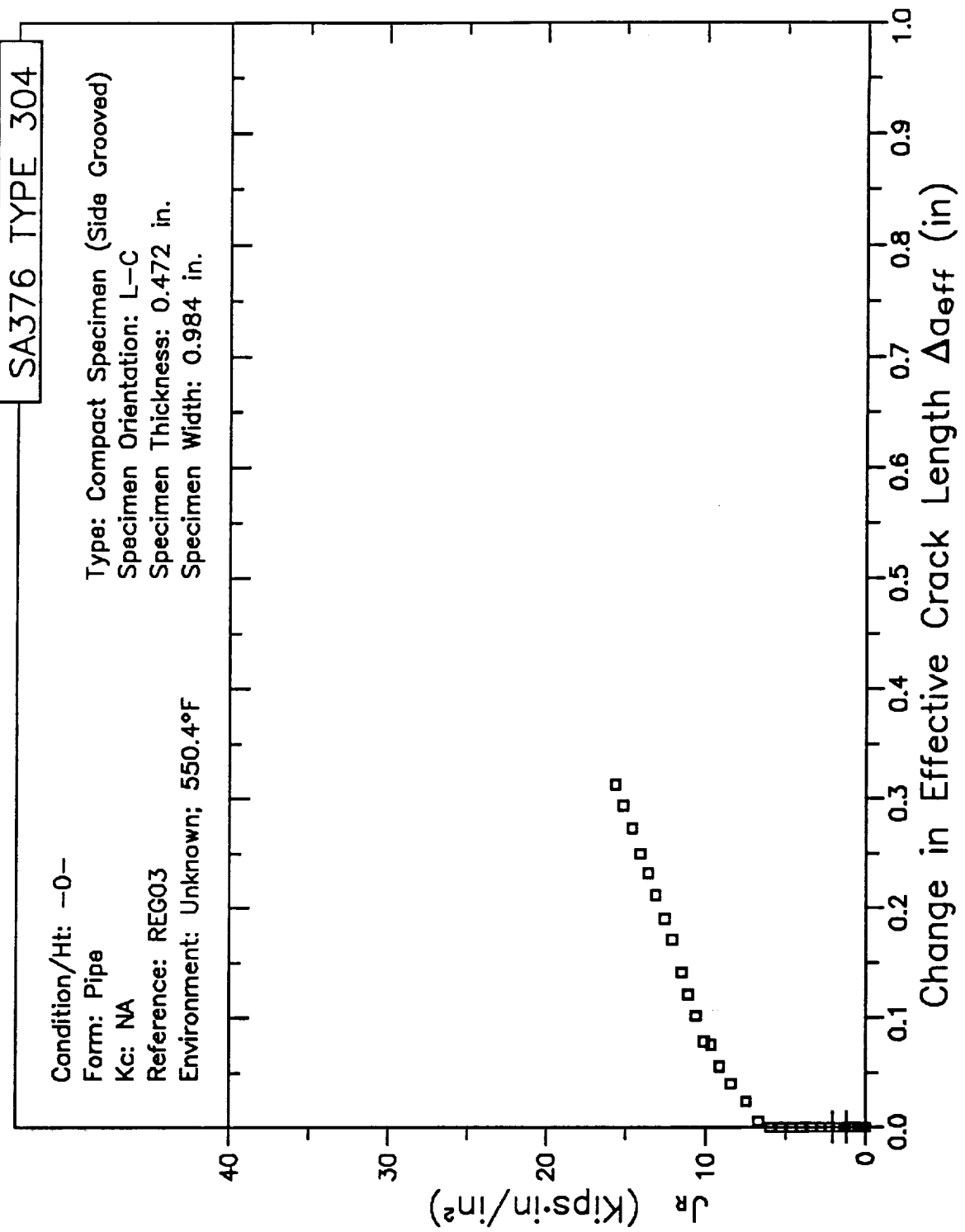
SA376 TYPE 304

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG01  
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 0.228 in.  
Specimen Width: 0.799 in.



# RESISTANCE CURVE

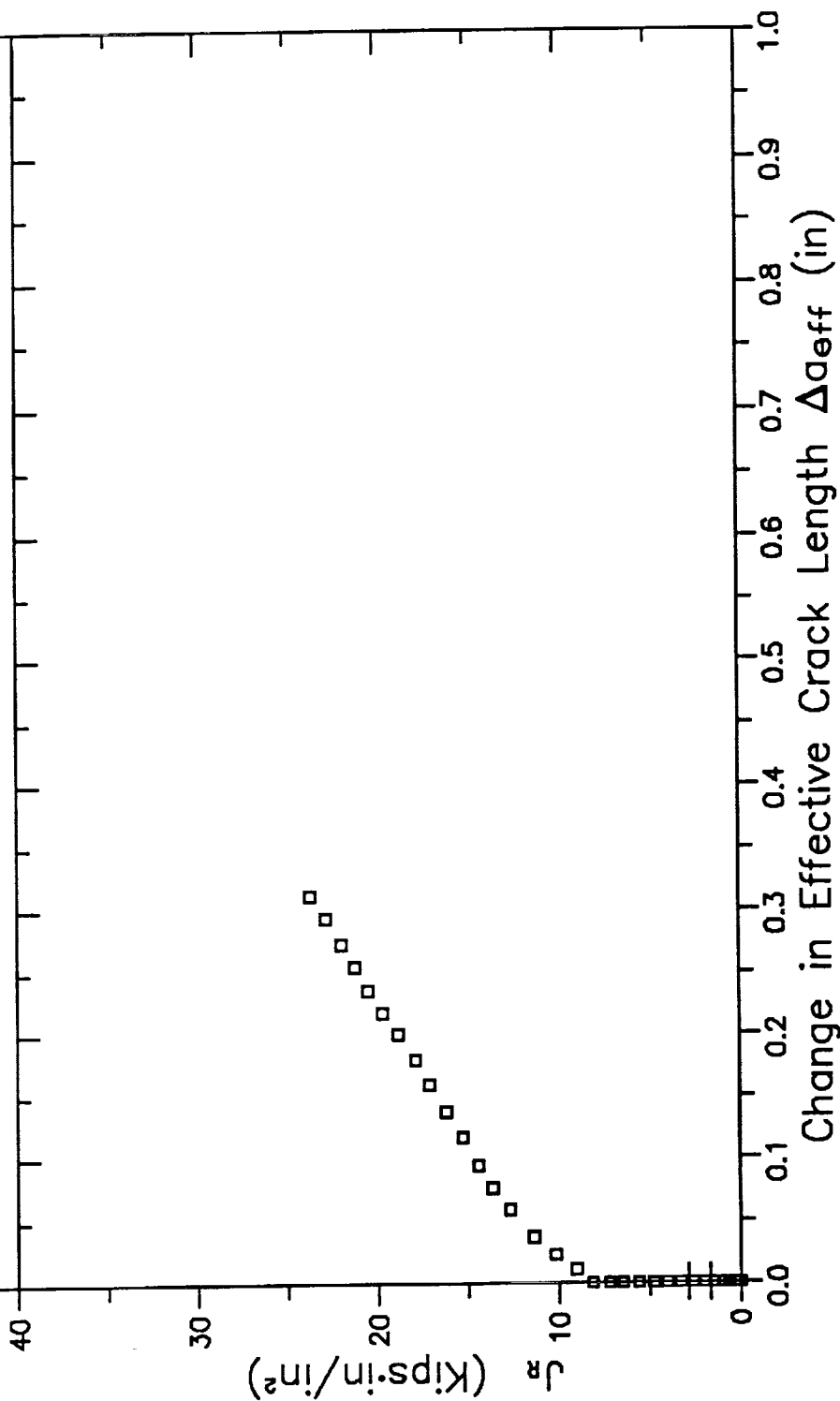


# RESISTANCE CURVE

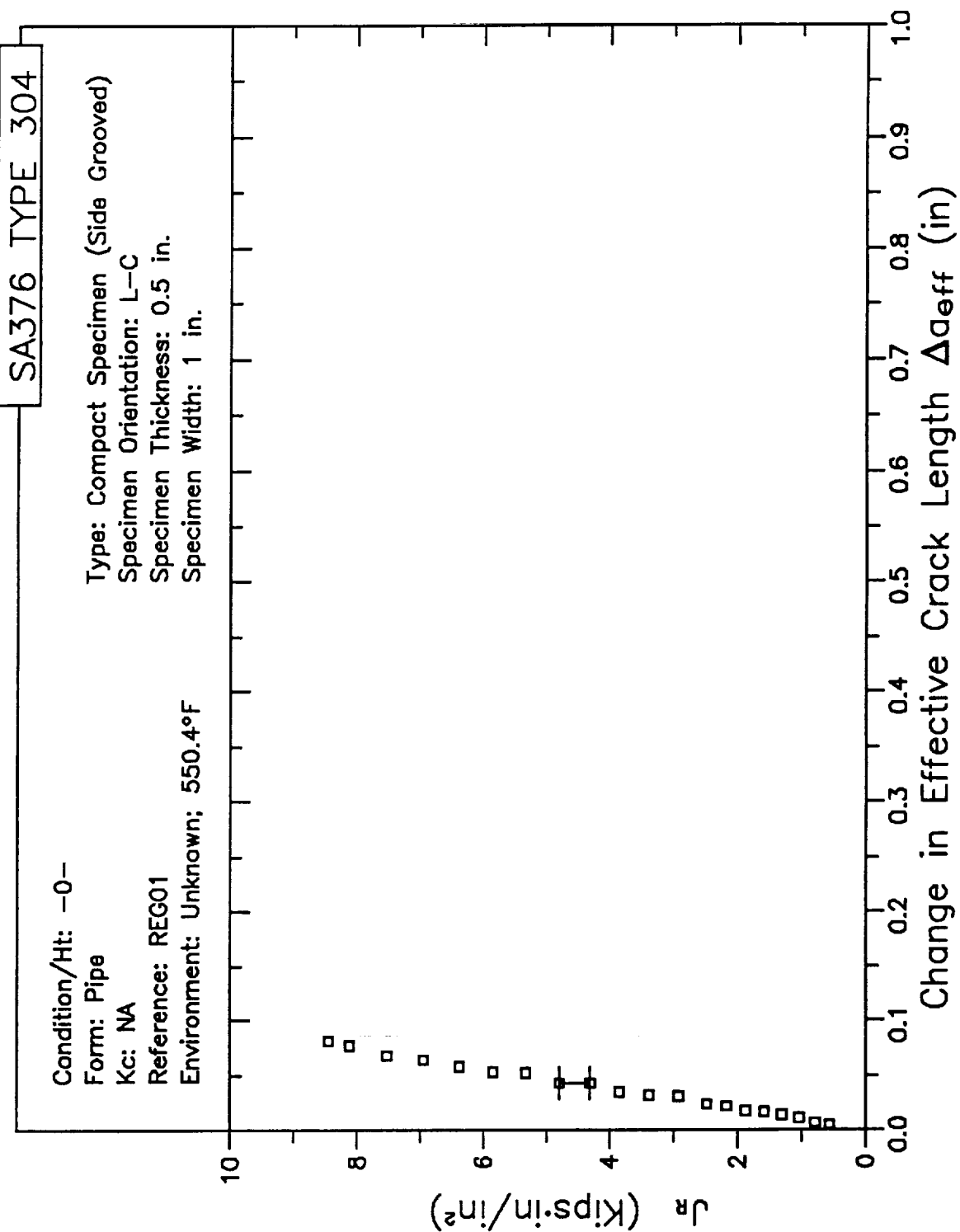
SA376 TYPE 304

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG03  
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 0.472 in.  
Specimen Width: 0.984 in.



# RESISTANCE CURVE

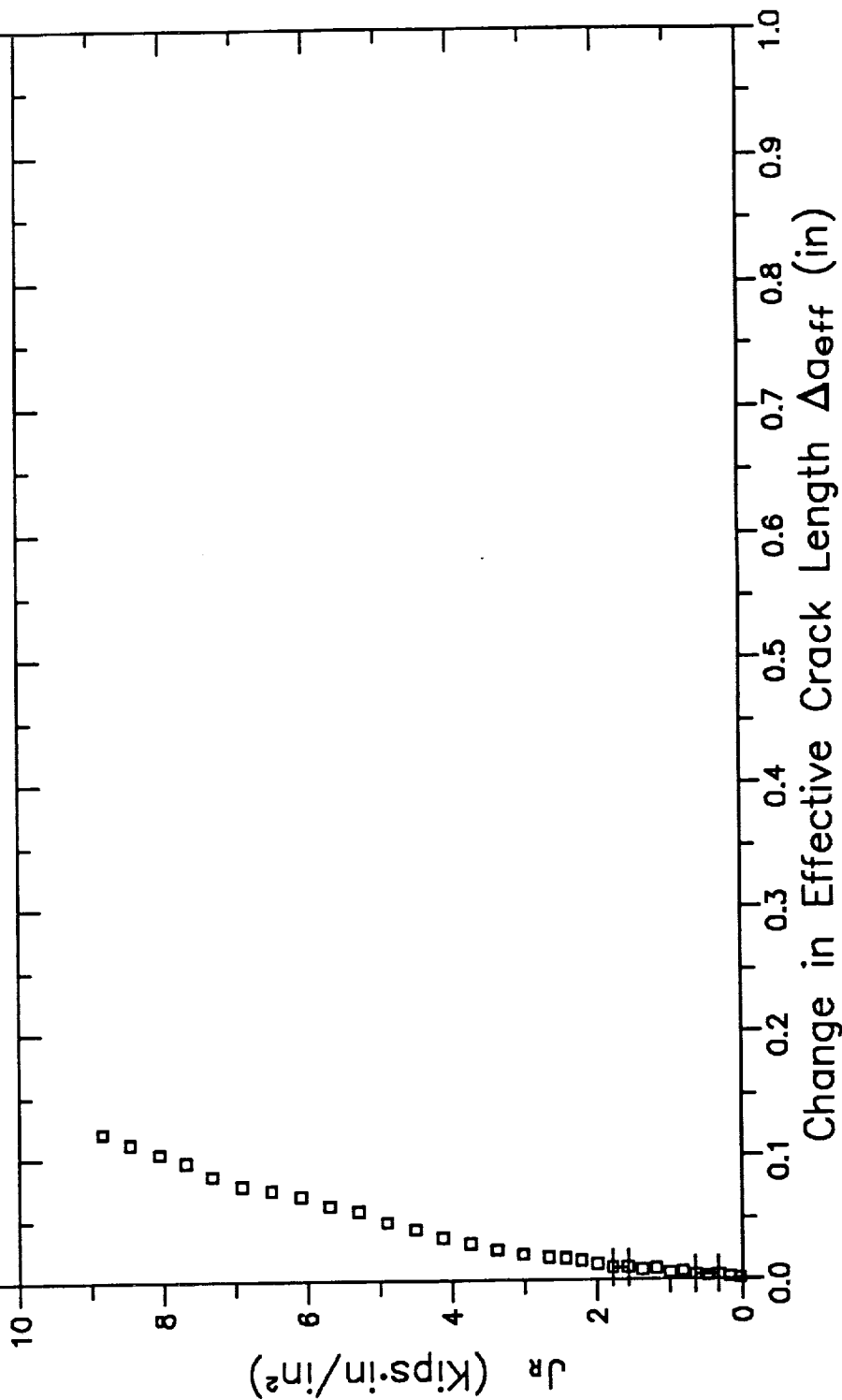


# RESISTANCE CURVE

SA376 TYPE 304

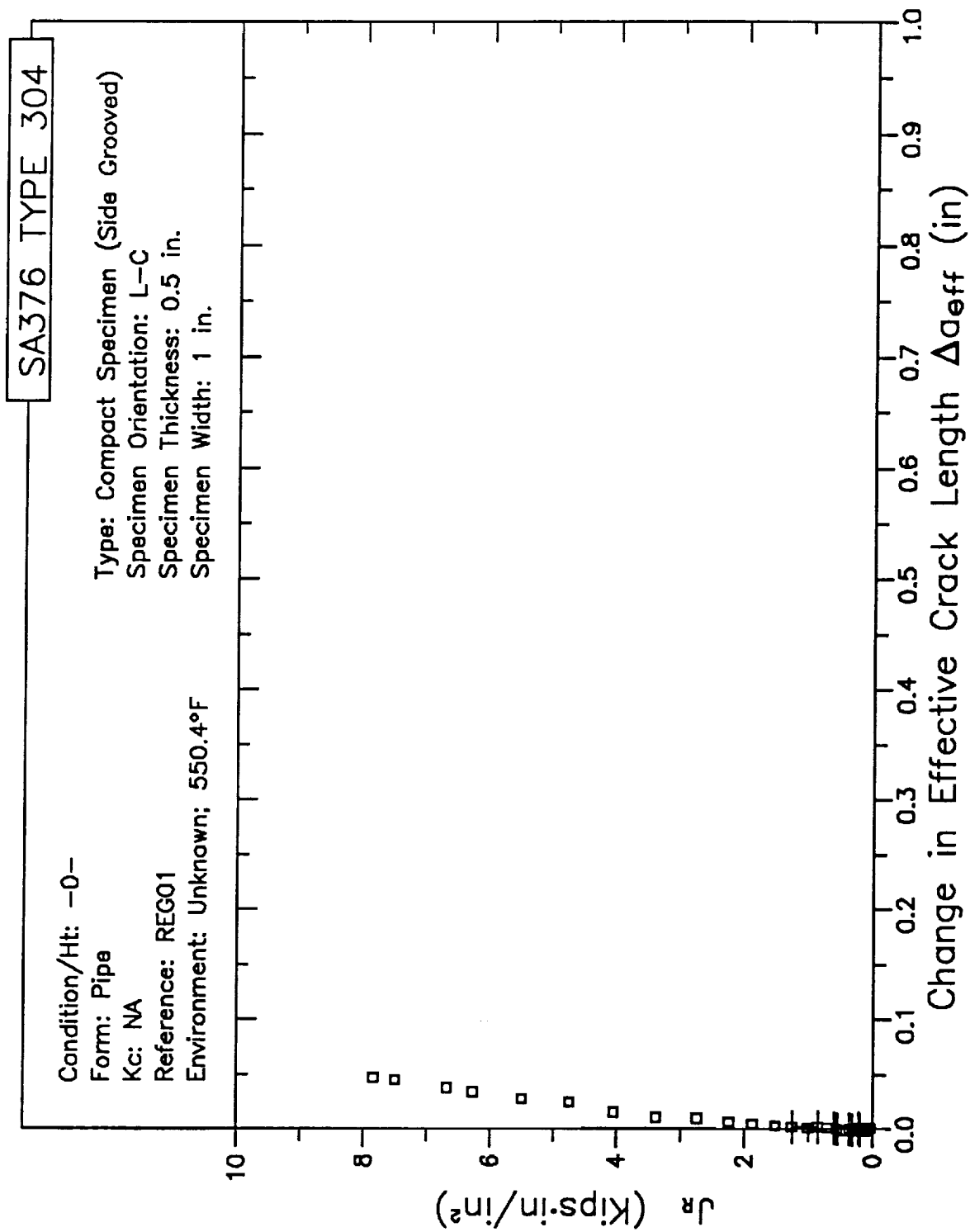
Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG01  
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 0.5 in.  
Specimen Width: 1 in.





# RESISTANCE CURVE

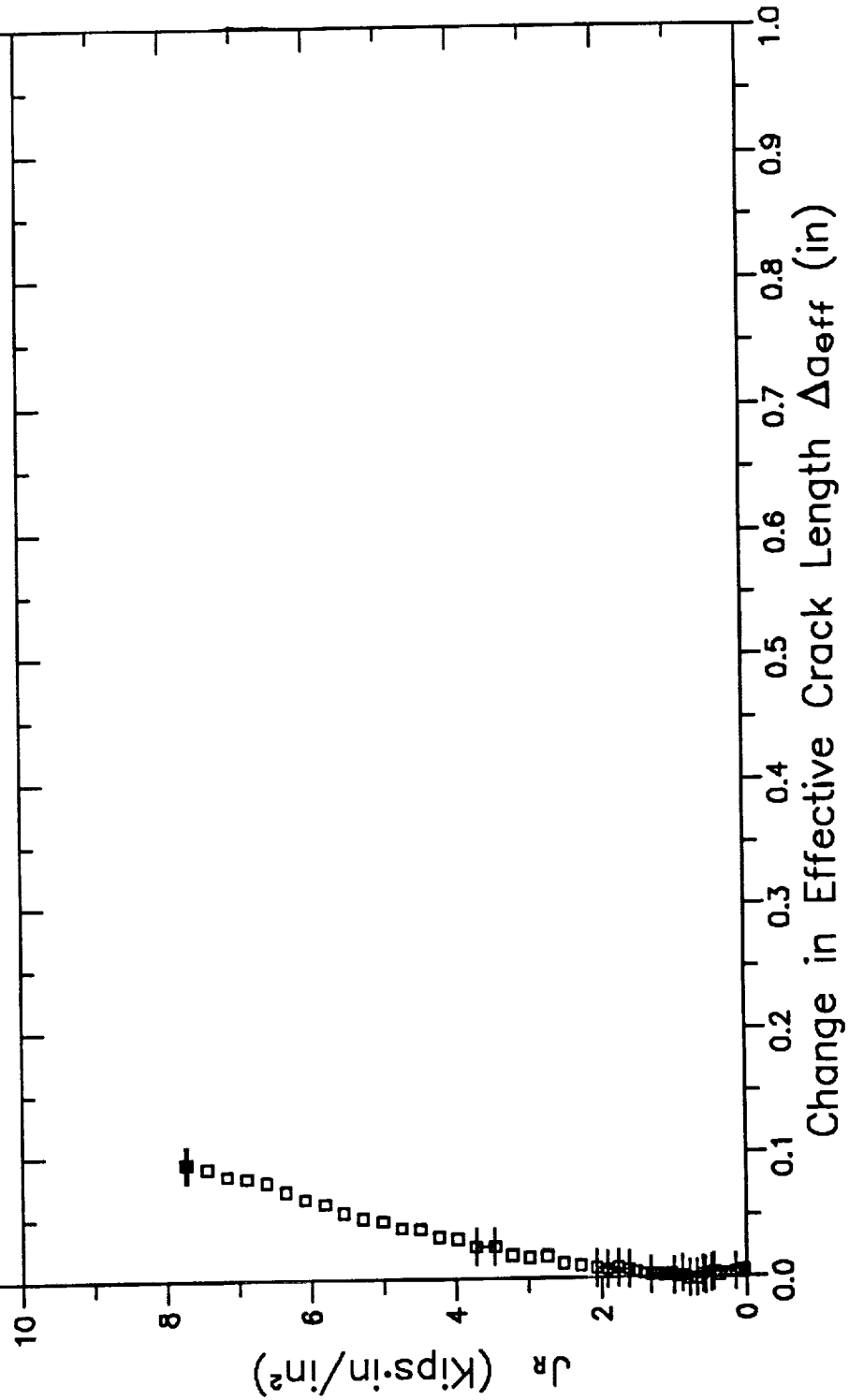


# RESISTANCE CURVE

SA376 TYPE 304

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG01  
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 0.5 in.  
Specimen Width: 1 in.

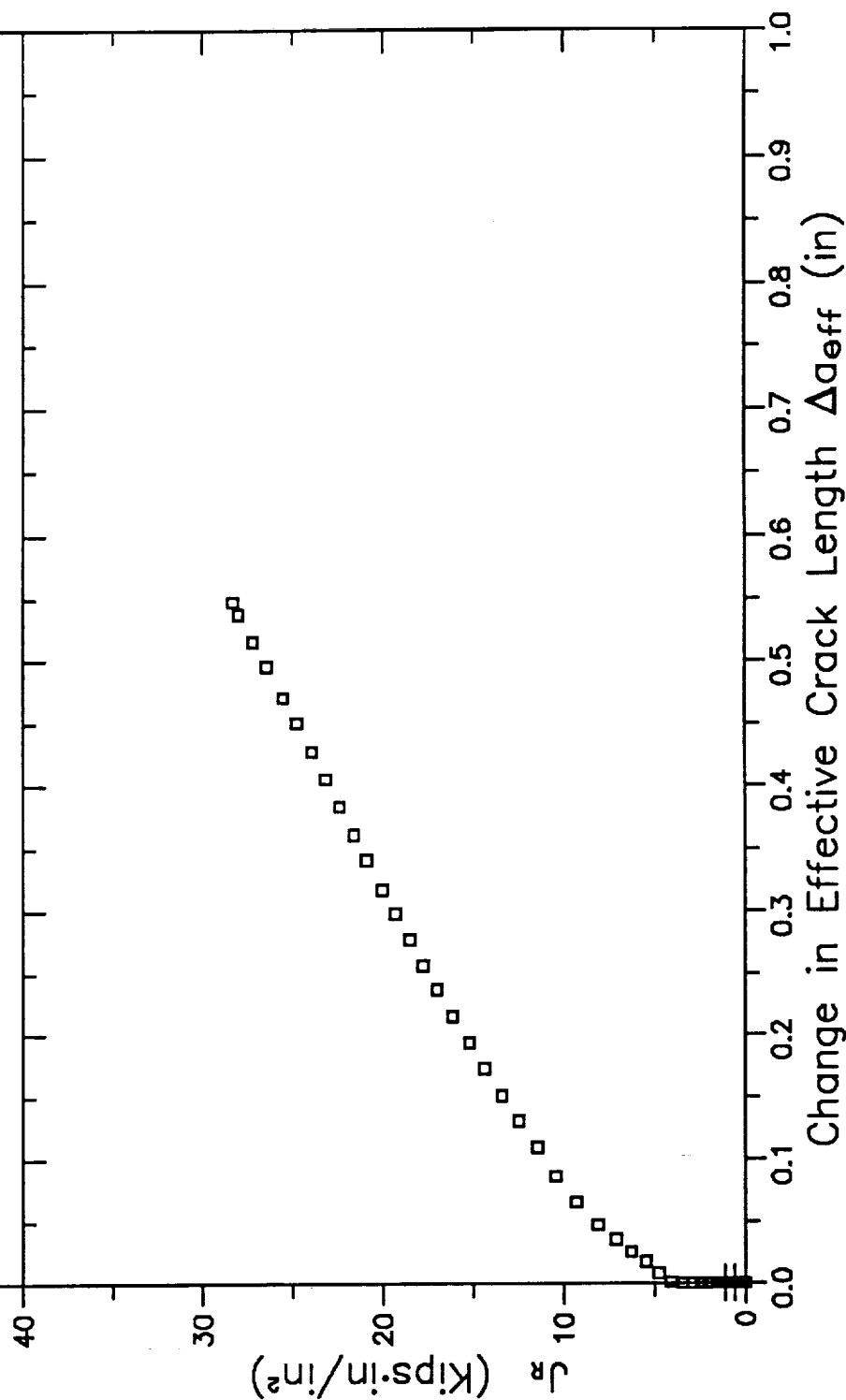


# RESISTANCE CURVE

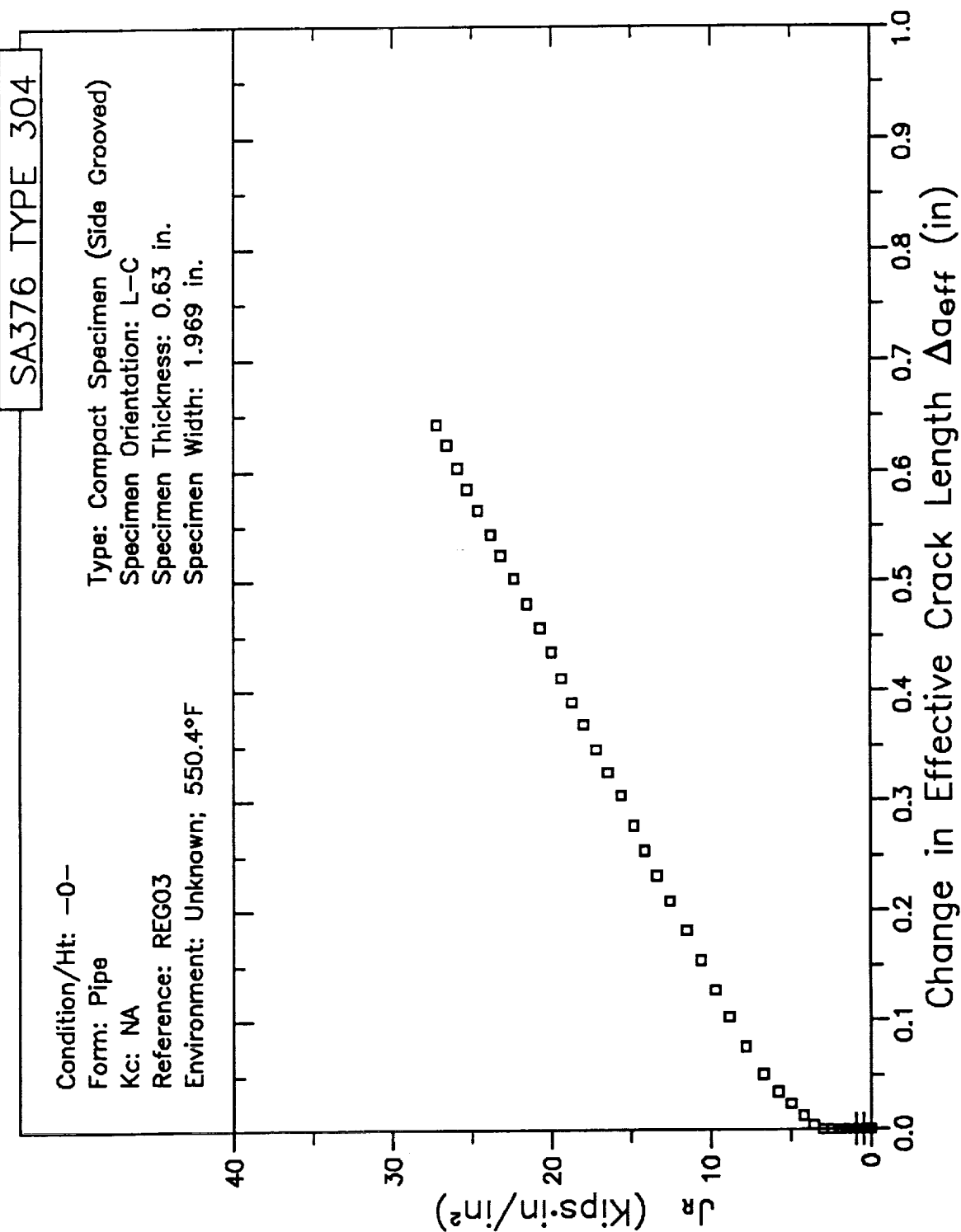
SA376 TYPE 304

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG03  
Environment: Unknown; 550.4°F

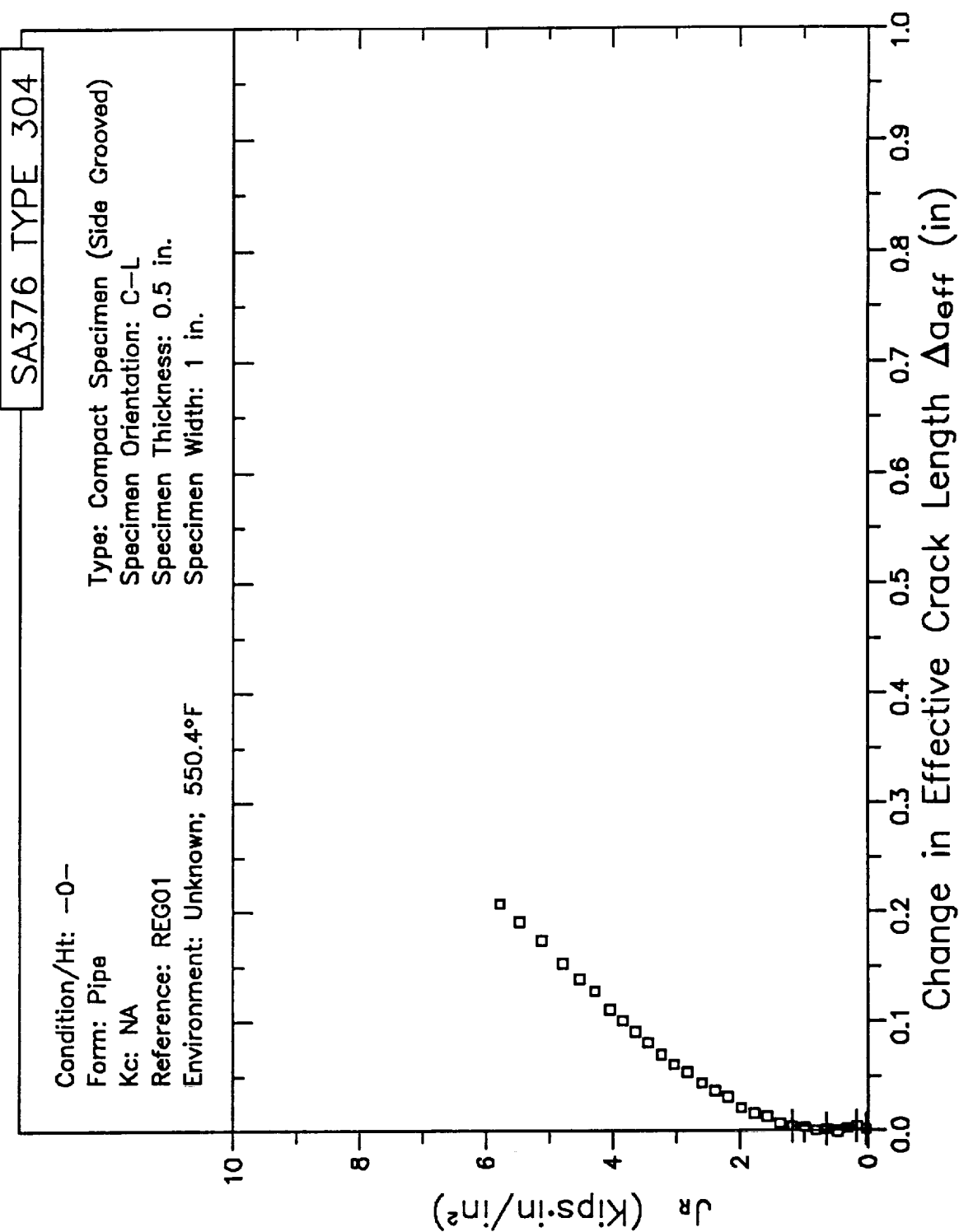
Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 0.63 in.  
Specimen Width: 1.969 in.



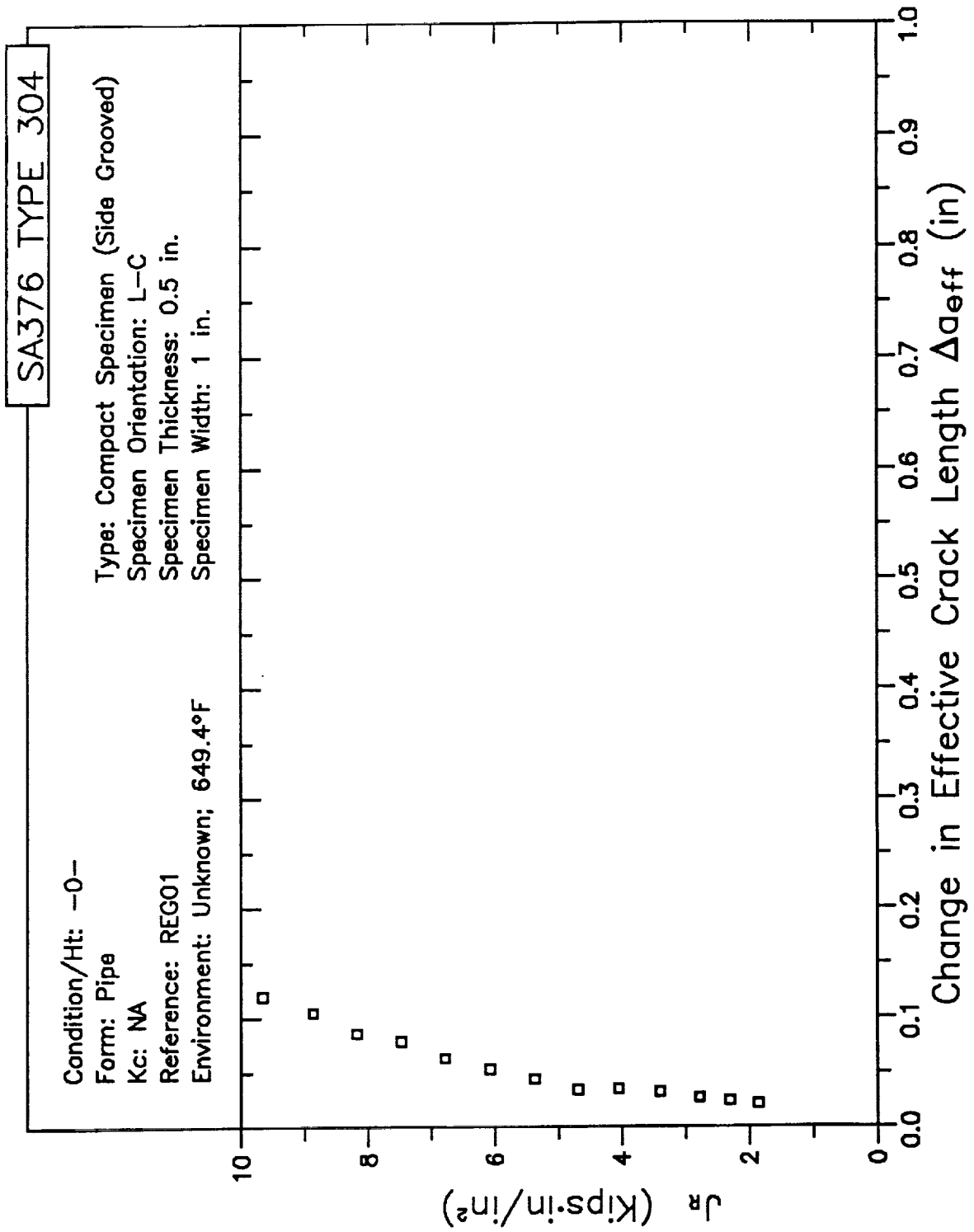
# RESISTANCE CURVE



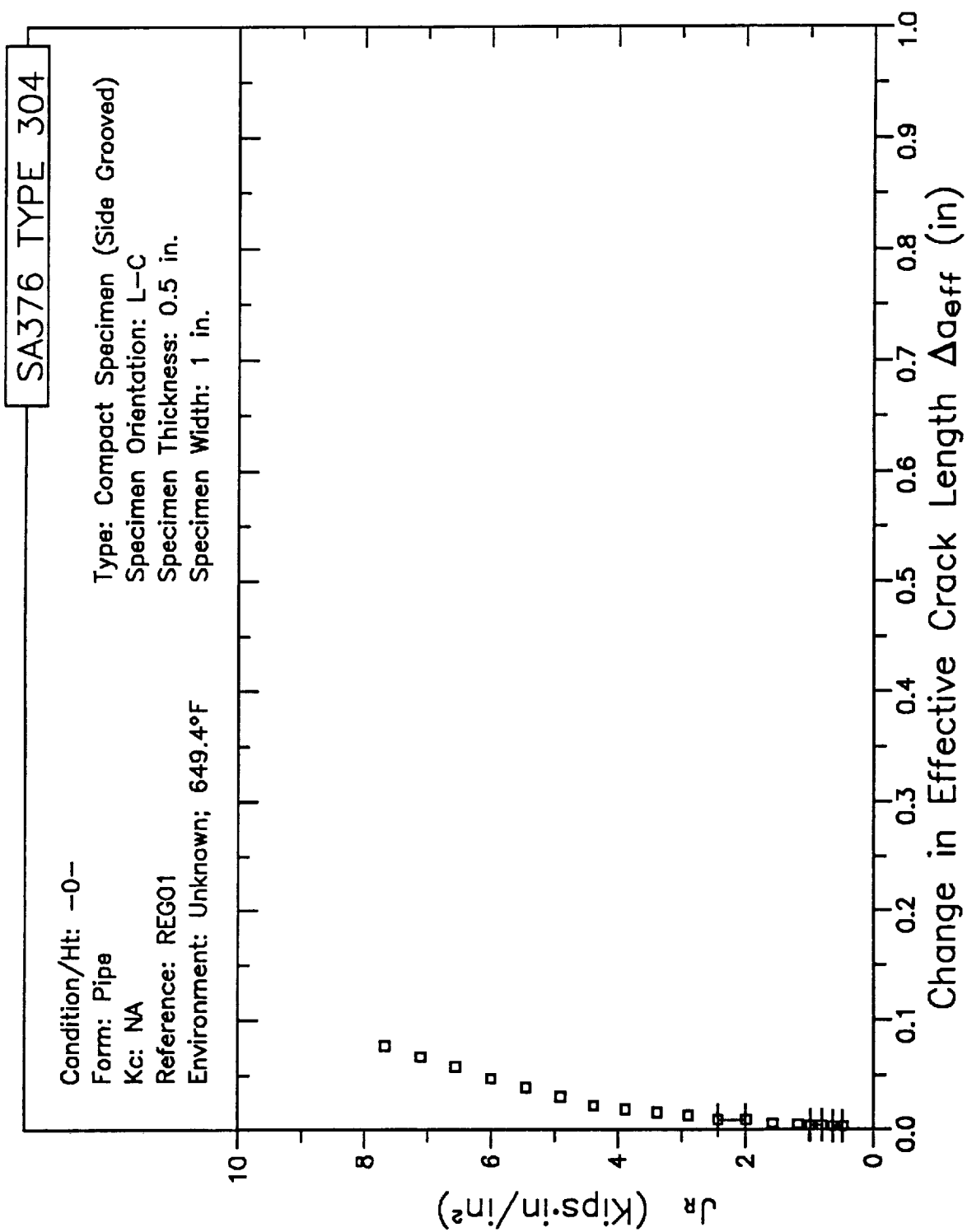
# RESISTANCE CURVE



# RESISTANCE CURVE



# RESISTANCE CURVE

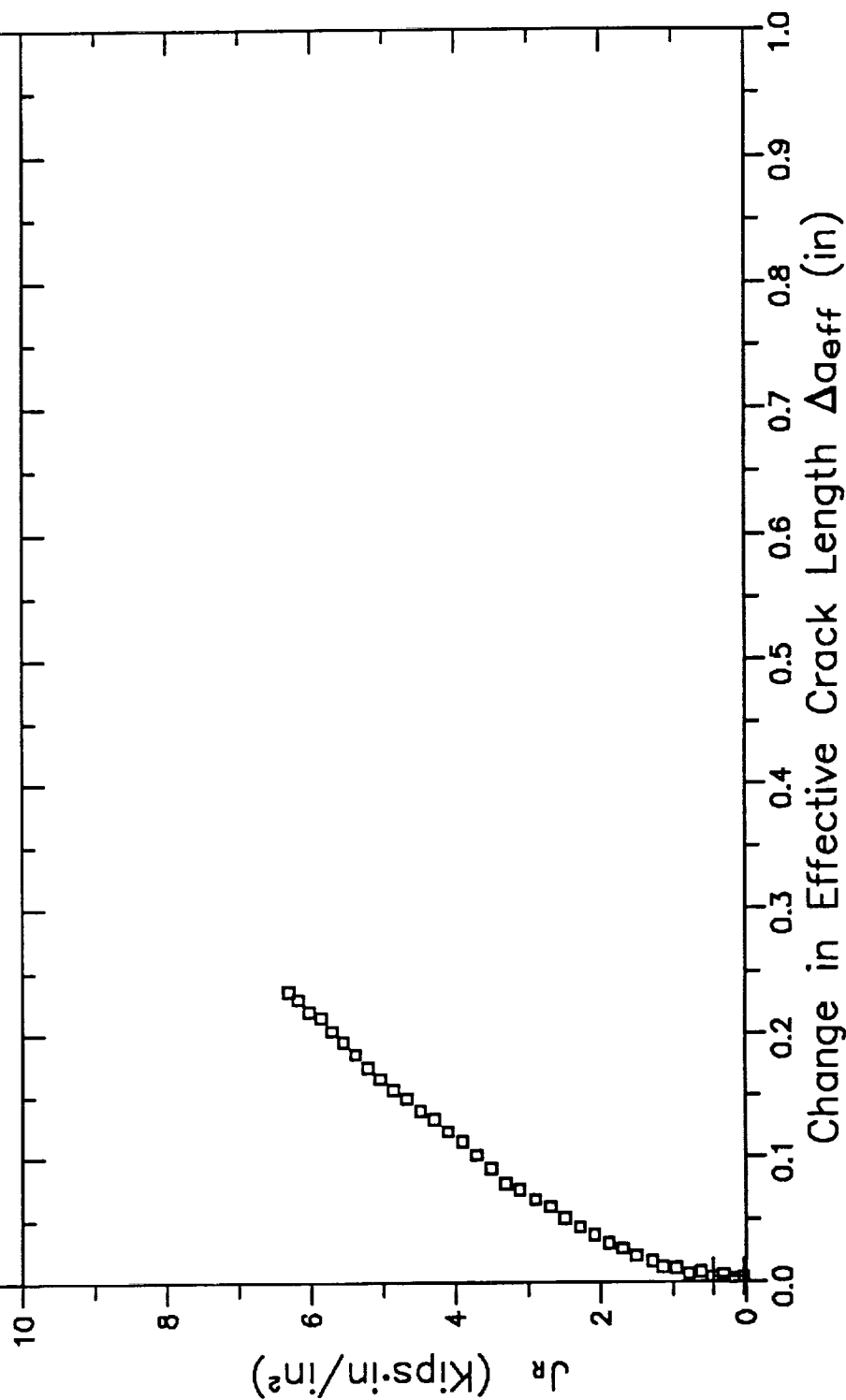


# RESISTANCE CURVE

SA376 TYPE 304

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG01  
Environment: Unknown; 649.4°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: C-L  
Specimen Thickness: 0.5 in.  
Specimen Width: 1 in.





# RESISTANCE CURVE

SA451-CF3

Condition/Hit: ANNEALED 10000 HRS AT 662 F

Form: Pipe

Kc: NA

Reference: REG02

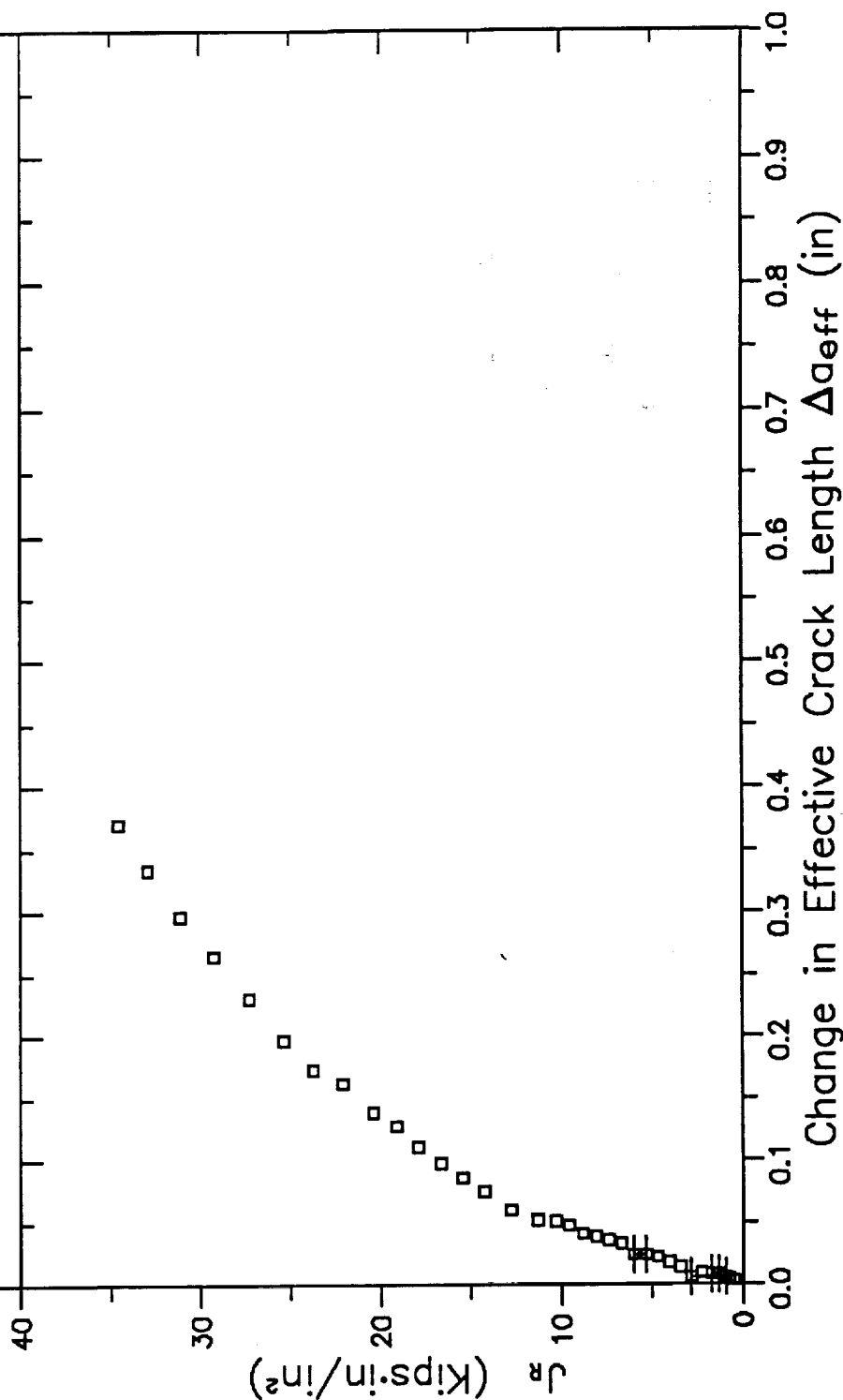
Environment: Unknown; 73.4°F

Type: Compact Specimen (Side Grooved)

Specimen Orientation: L-C

Specimen Thickness: 1 in.

Specimen Width: 2 in.



# RESISTANCE CURVE

SA451-CF3

Condition/Ht: ANNEALED 10000 HRS AT 662 F

Form: Pipe

Kc: NA

Reference: REG02

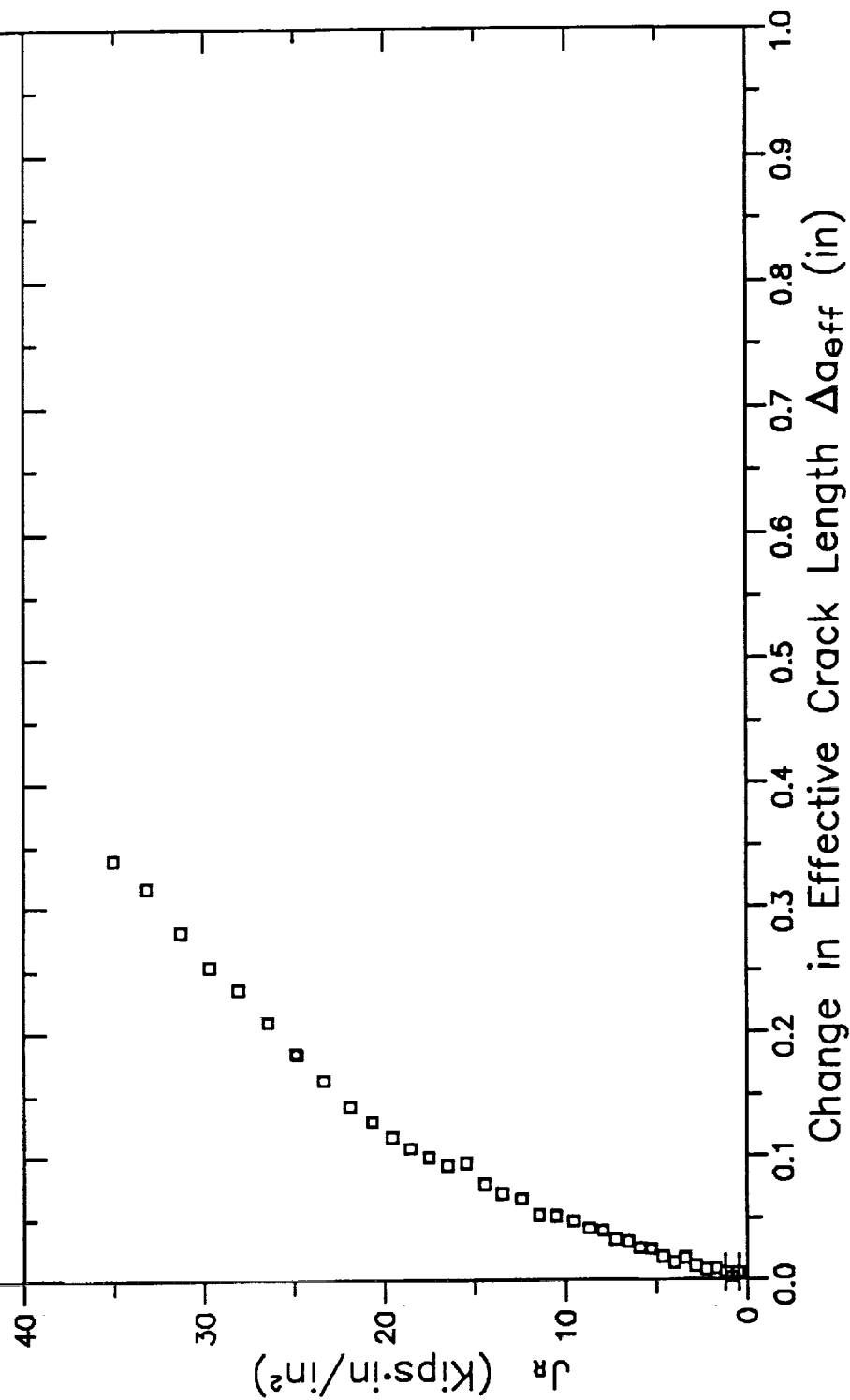
Environment: Unknown; 77°F

Type: Compact Specimen (Side Grooved)

Specimen Orientation: L-C

Specimen Thickness: 1 in.

Specimen Width: 2 in.



# RESISTANCE CURVE

SA451-CF3

Condition/Ht: ANNEALED 10000 HRS AT 662 F

Form: Pipe

Kc: NA

Reference: REG02

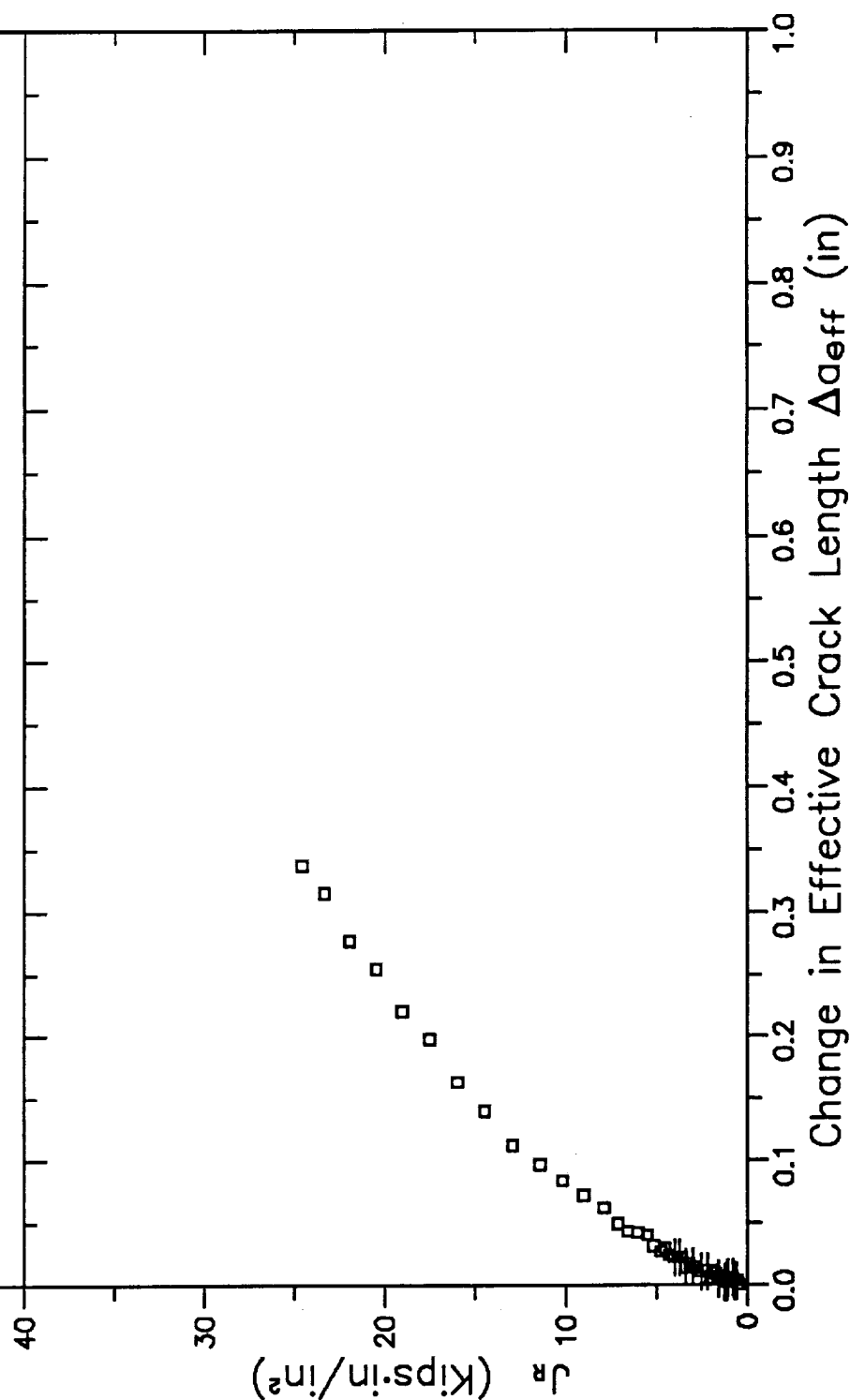
Environment: Unknown; 554°F

Type: Compact Specimen (Side Grooved)

Specimen Orientation: L-C

Specimen Thickness: 1 in.

Specimen Width: 2 in.



# RESISTANCE CURVE

SA451-CF3

Condition/Ht: ANNEALED 10000 HRS AT 752 F

Form: Pipe

Kc: NA

Reference: REG02

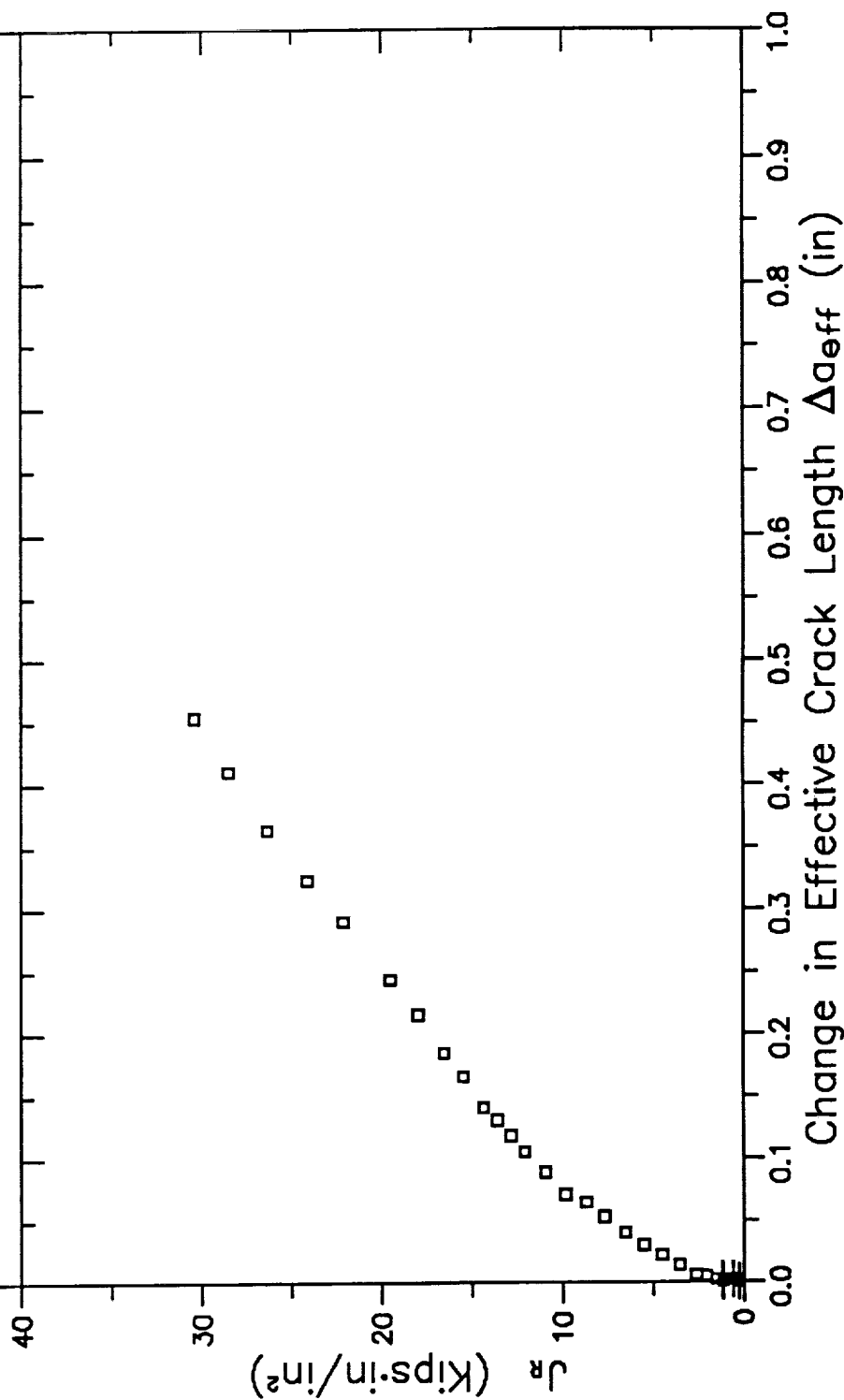
Environment: Unknown; 73.4°F

Type: Compact Specimen (Side Grooved)

Specimen Orientation: L-C

Specimen Thickness: 1 in.

Specimen Width: 2 in.



# RESISTANCE CURVE

SA451-CF3

Condition/Ht: ANNEALED 10000 HRS AT 752 F

Form: Pipe

Kc: NA

Reference: REG02

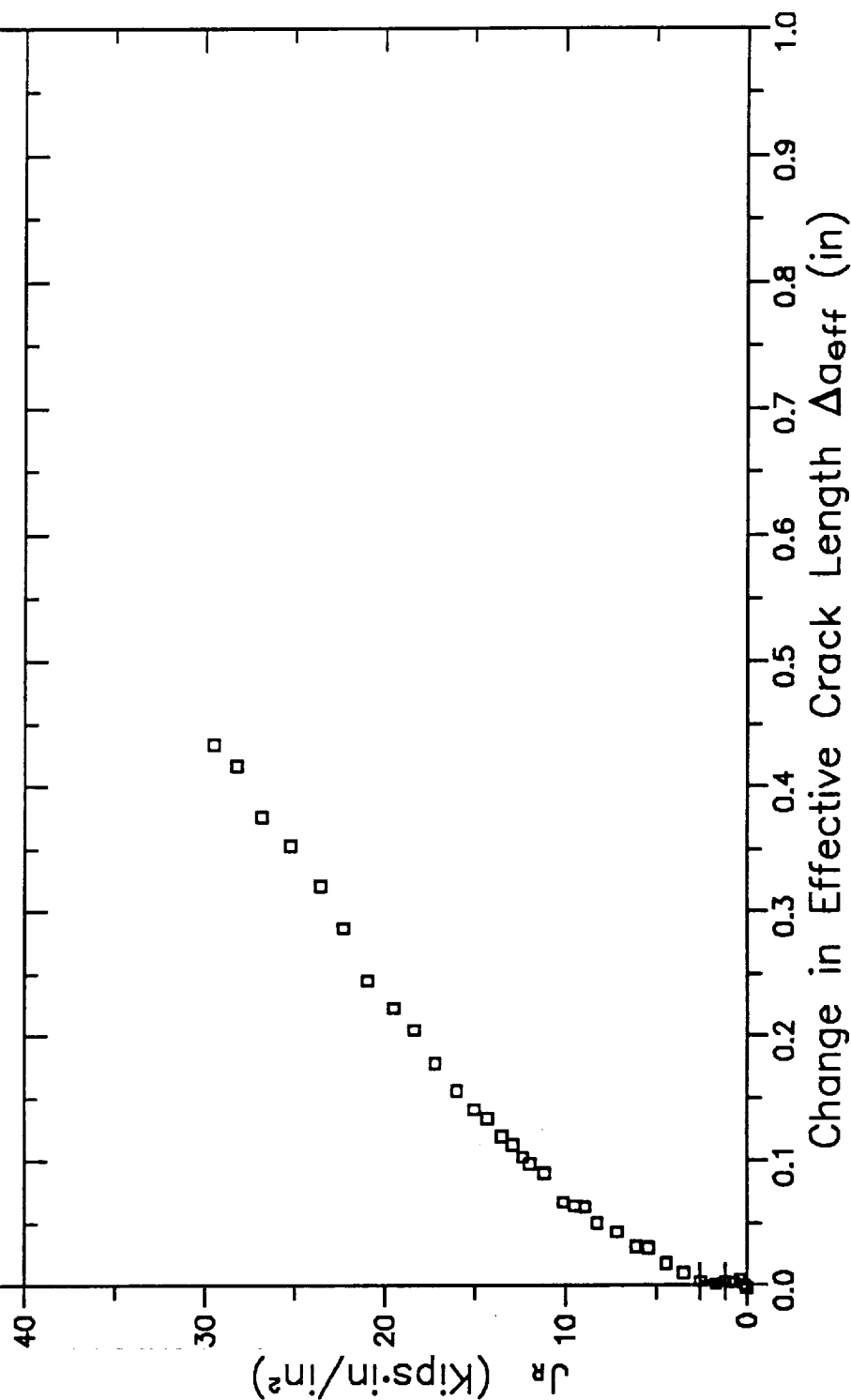
Environment: Unknown; 73.4°F

Type: Compact Specimen (Side Grooved)

Specimen Orientation: L-C

Specimen Thickness: 1 in.

Specimen Width: 2 in.



# RESISTANCE CURVE

SA451-CF3

Condition/Ht: ANNEALED 10000 HRS AT 752 F

Form: Pipe

Kc: NA

Reference: REG02

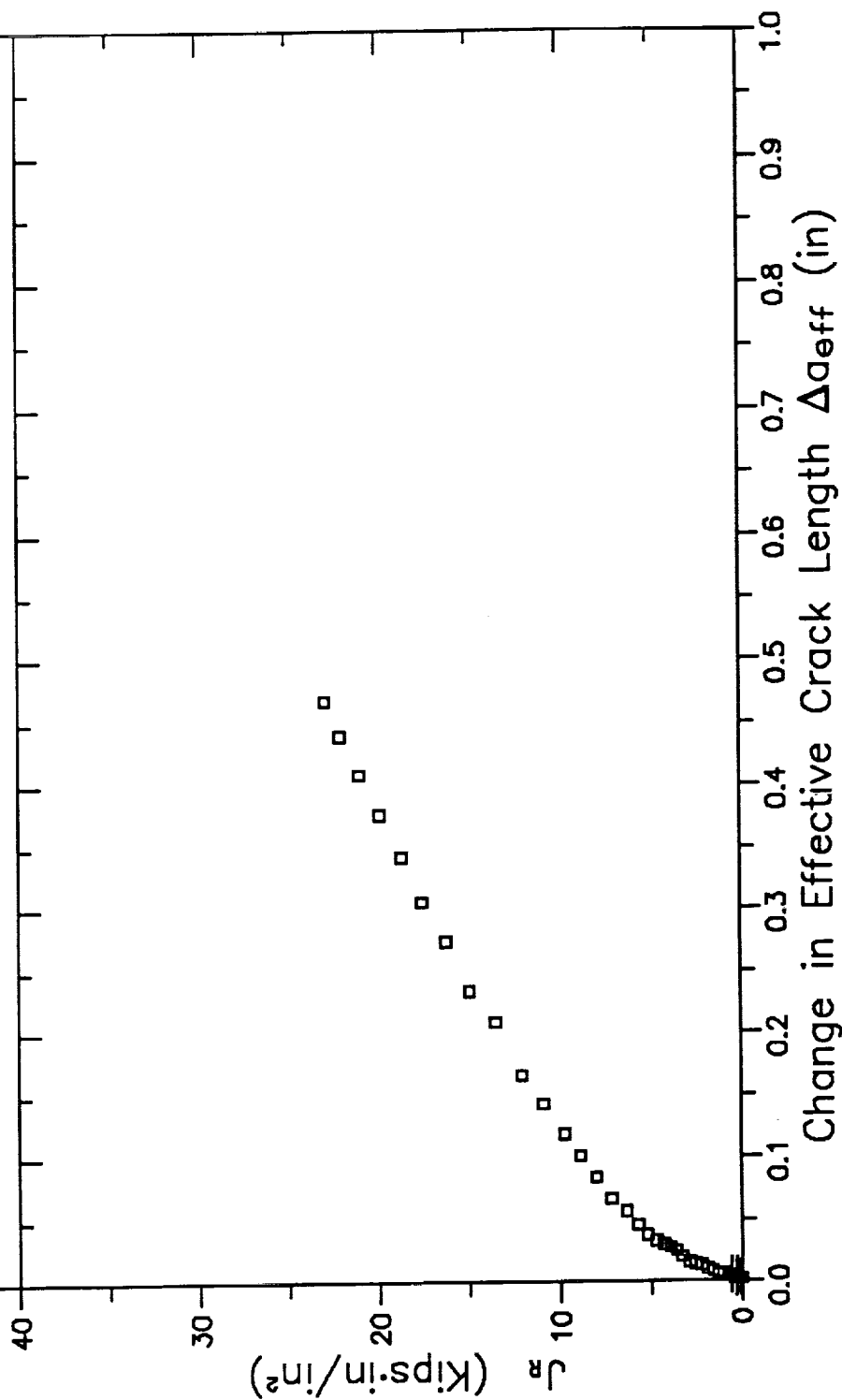
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)

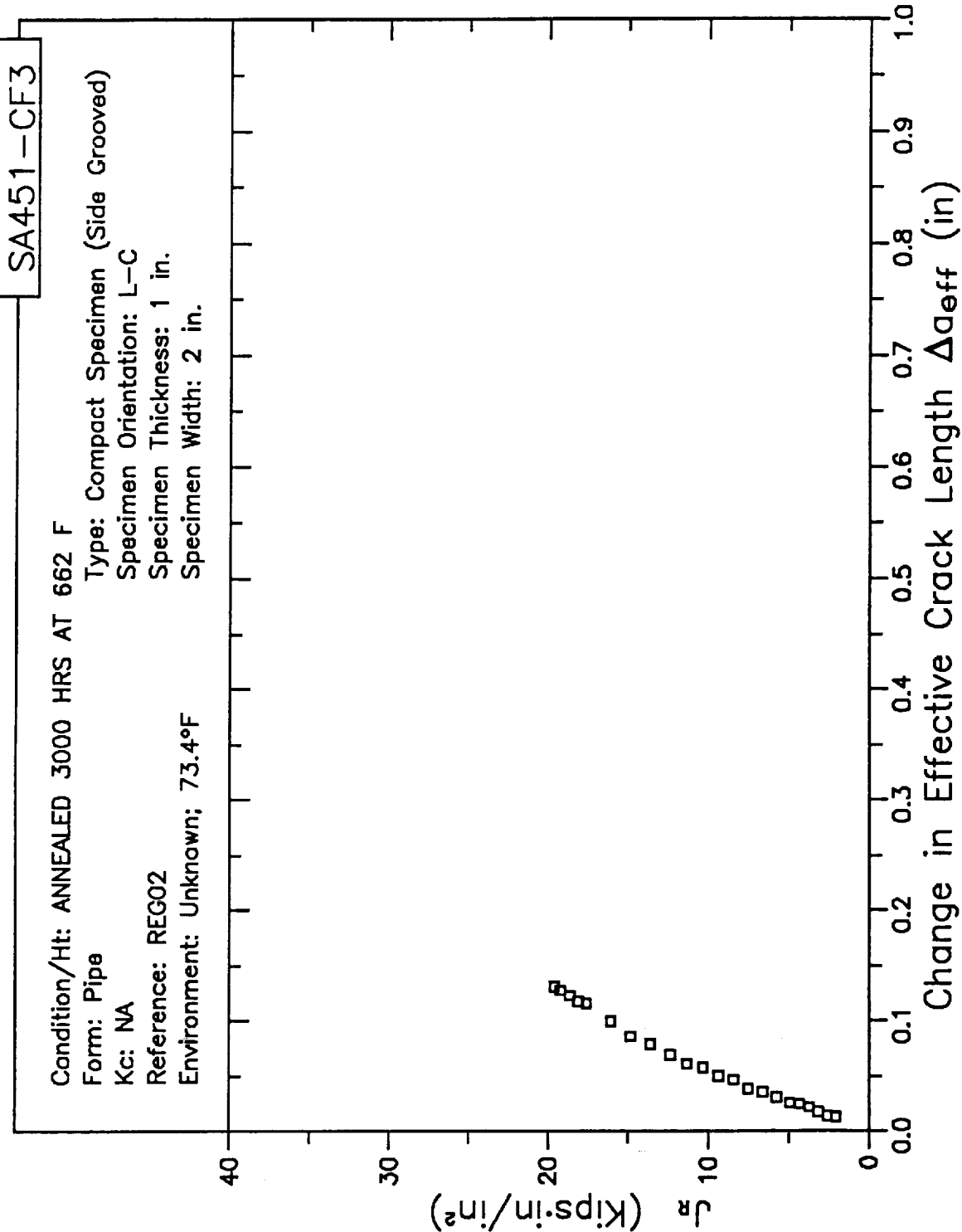
Specimen Orientation: L-C

Specimen Thickness: 1 in.

Specimen Width: 2 in.



# RESISTANCE CURVE



# RESISTANCE CURVE

SA451-CF3

Condition/Ht: ANNEALED 3000 HRS AT 662 F

Form: Pipe

Kc: NA

Reference: REG02

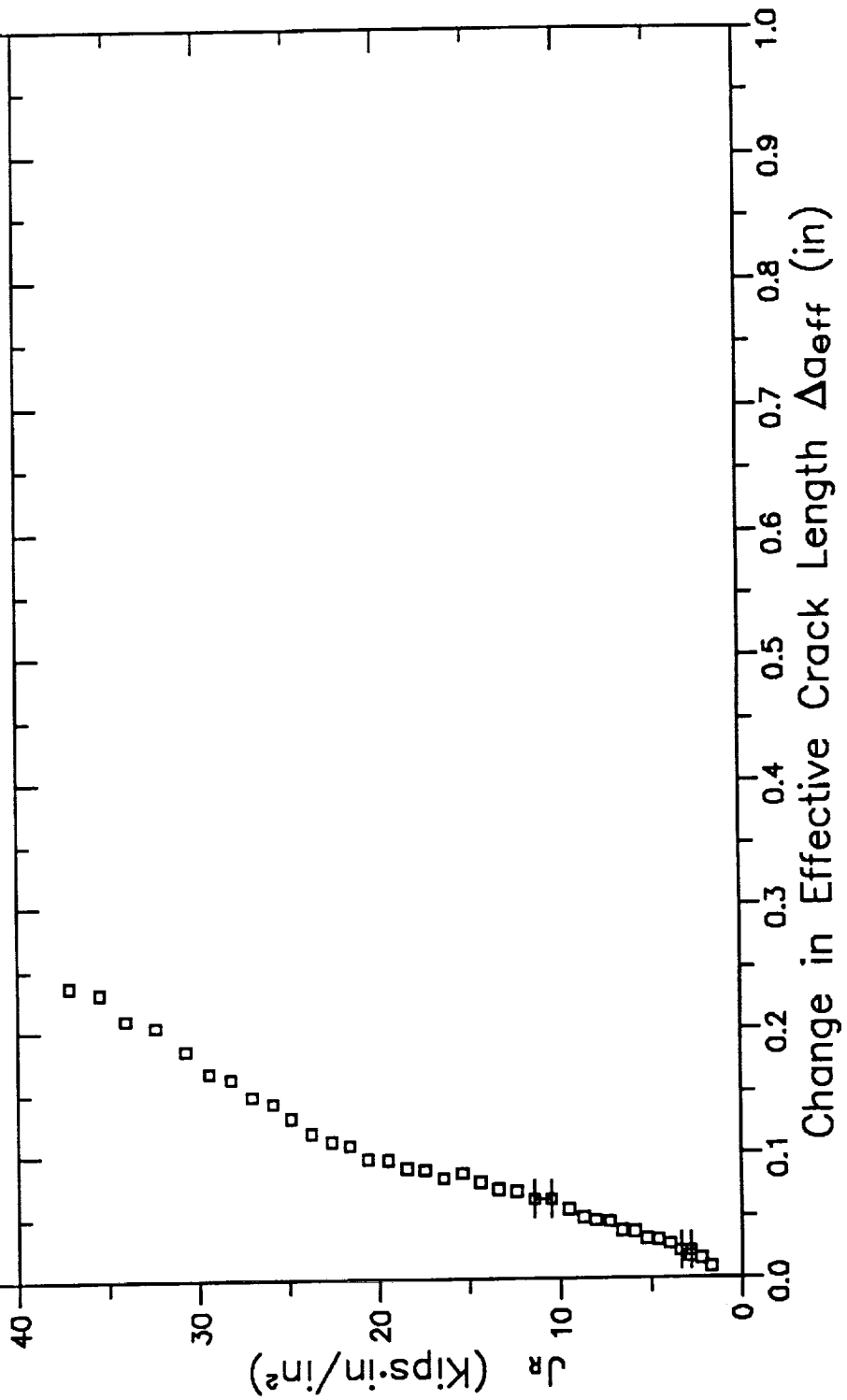
Environment: Unknown; 77°F

Type: Compact Specimen (Side Grooved)

Specimen Orientation: L-C

Specimen Thickness: 1 in.

Specimen Width: 2 in.





# RESISTANCE CURVE

SA451-CF3

Condition/Ht: ANNEALED 3000 HRS AT 662 F

Form: Pipe

Kc: NA

Reference: REG02

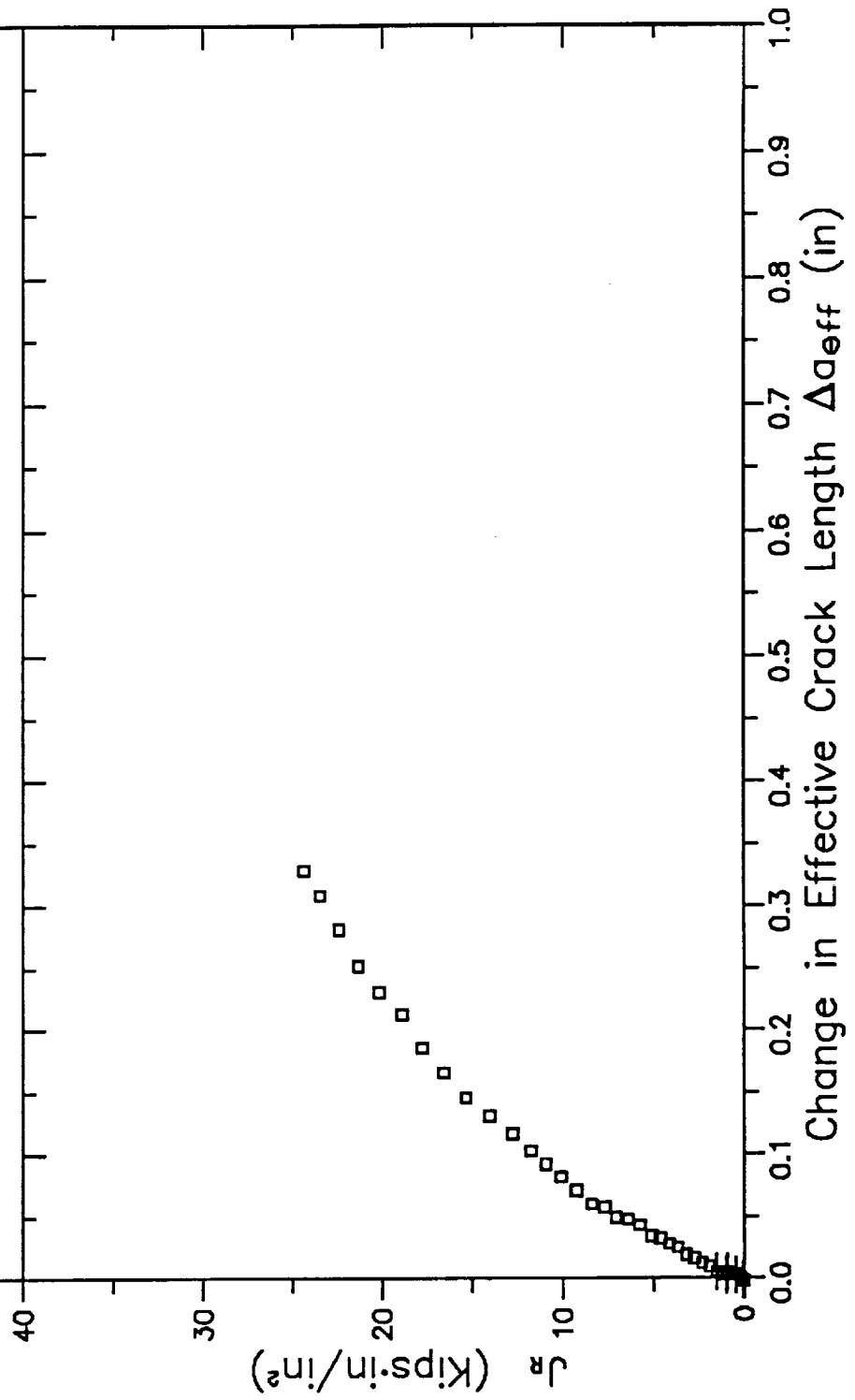
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)

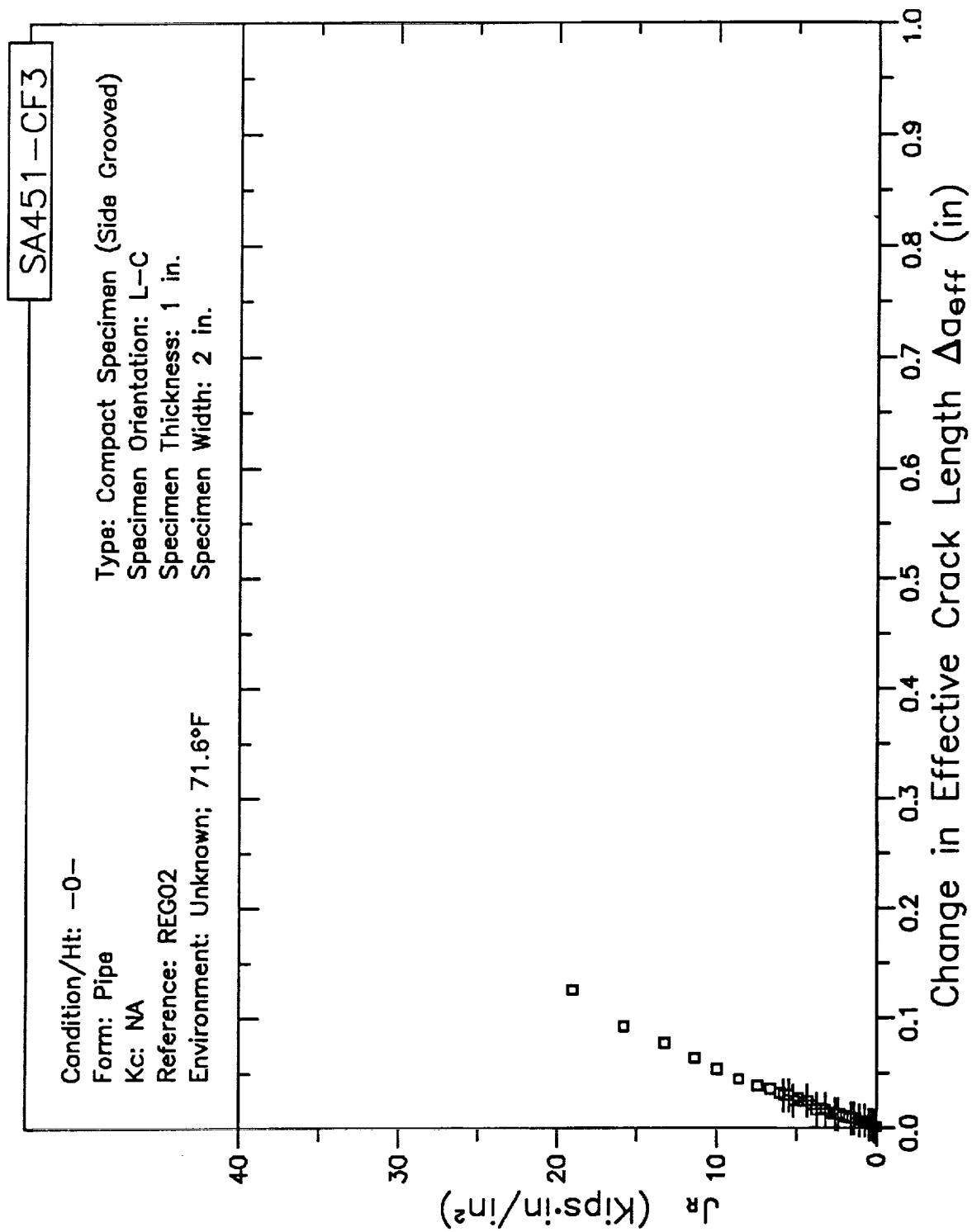
Specimen Orientation: L-C

Specimen Thickness: 1 in.

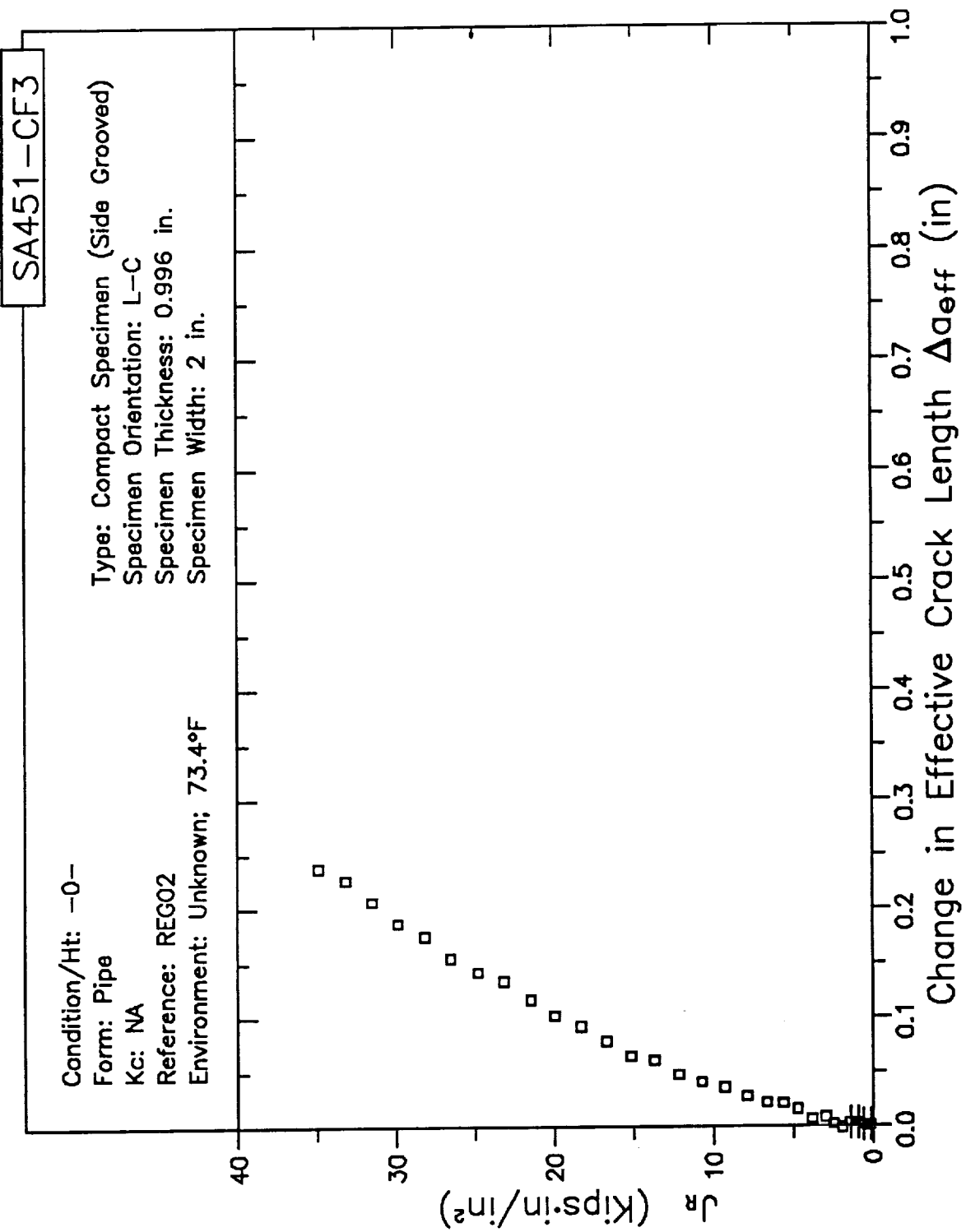
Specimen Width: 2 in.



# RESISTANCE CURVE



# RESISTANCE CURVE

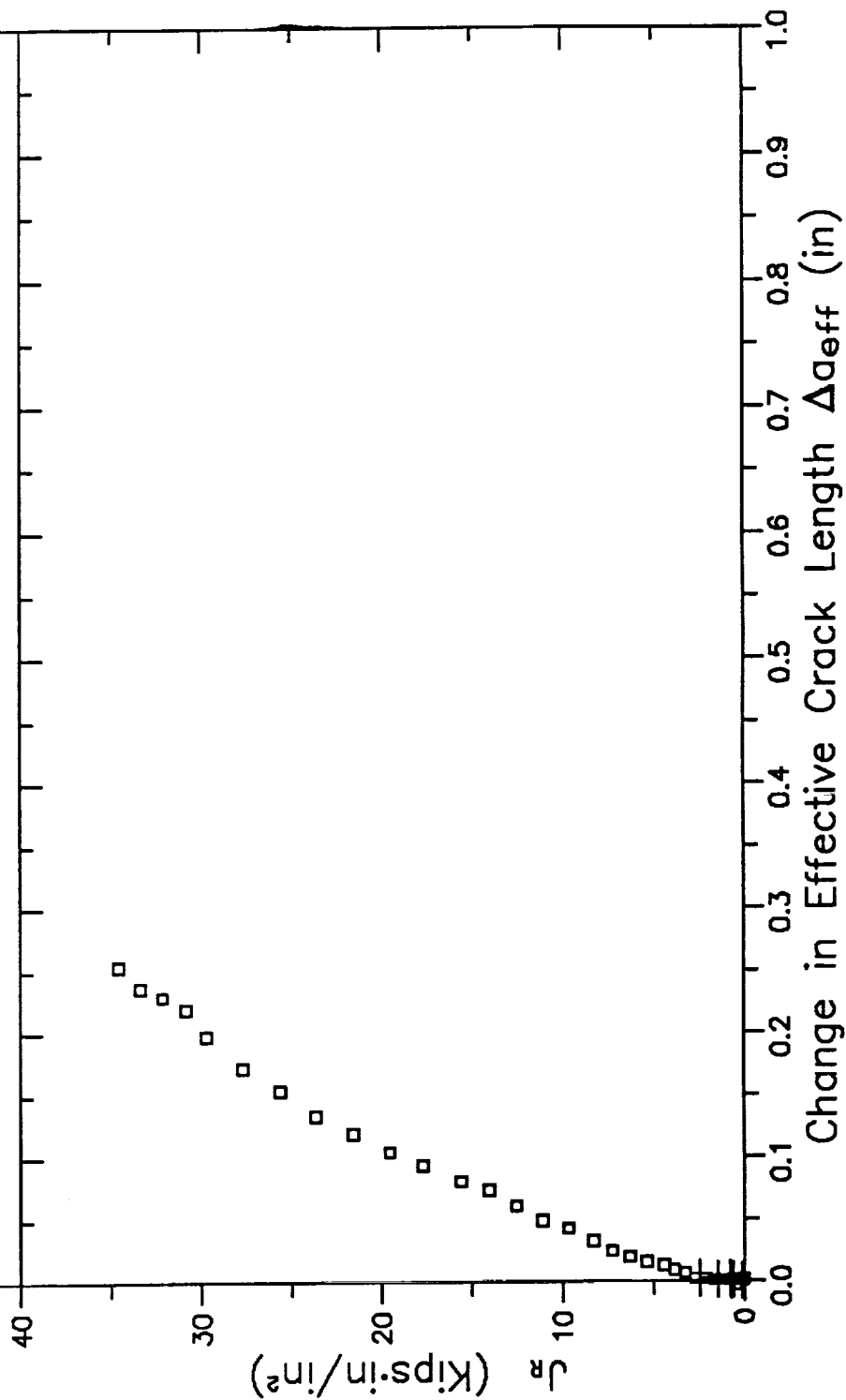


# RESISTANCE CURVE

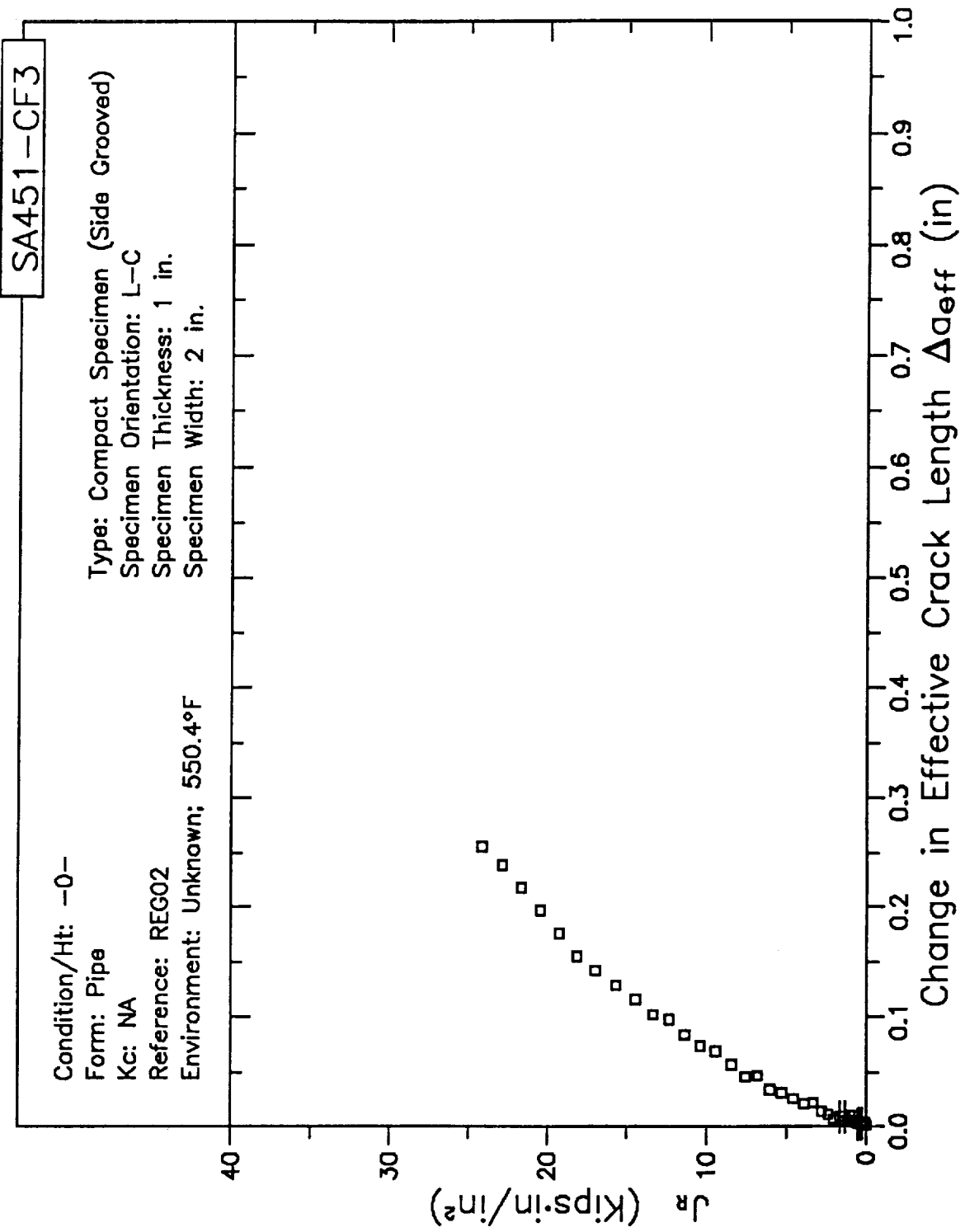
SA451-CF3

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG02  
Environment: Unknown; 73.4°F

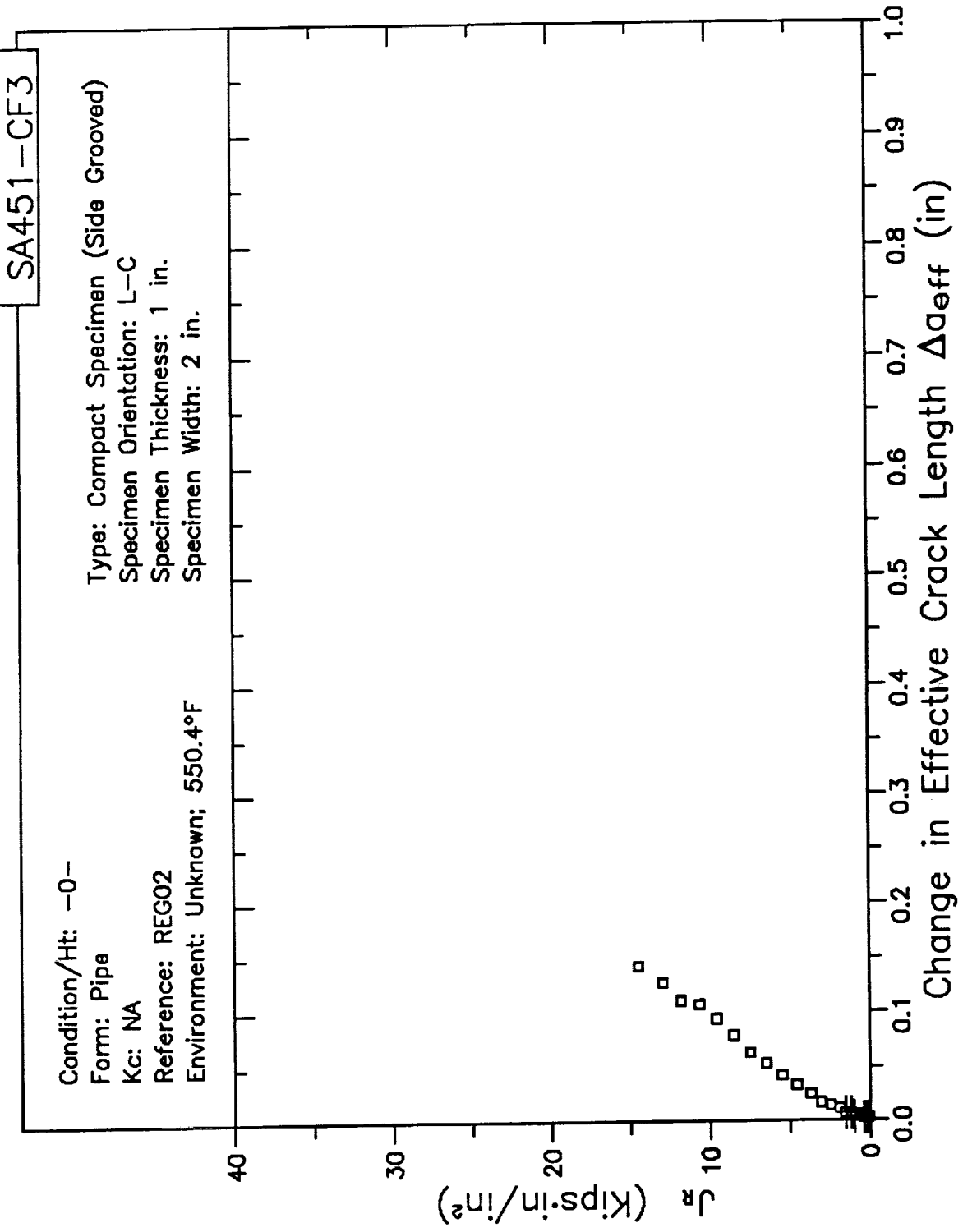
Type: Compact Specimen (Side Grooved)  
Specimen Orientation: C-L  
Specimen Thickness: 0.996 in.  
Specimen Width: 1.996 in.



# RESISTANCE CURVE



# RESISTANCE CURVE



# RESISTANCE CURVE

SA451-CF8

Condition/Ht: ANNEALED 10000 HRS AT 662 F

Form: Pipe

Kc: NA

Reference: REG02

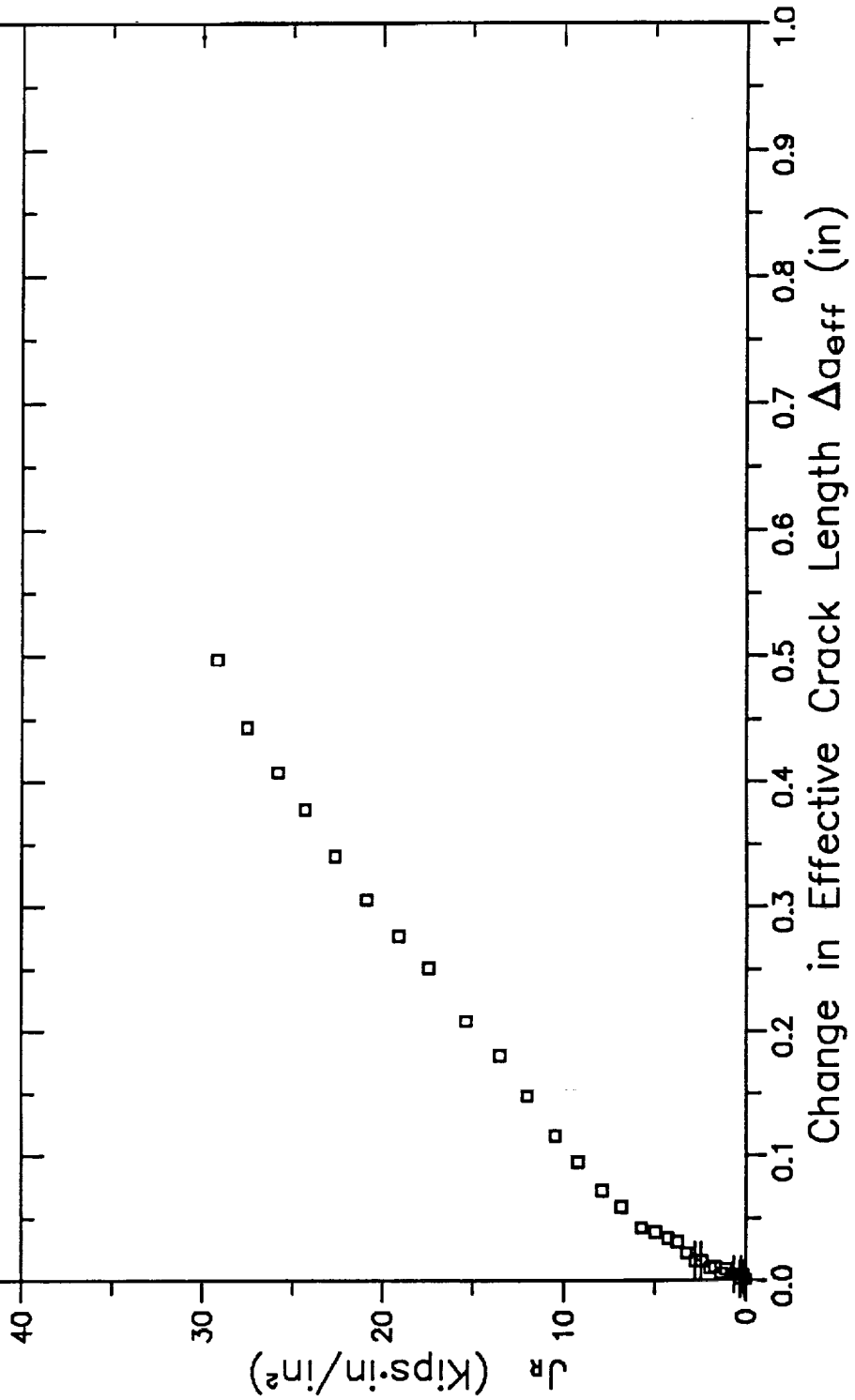
Environment: Unknown; 77°F

Type: Compact Specimen (Side Grooved)

Specimen Orientation: L-C

Specimen Thickness: 1 in.

Specimen Width: 2 in.



# RESISTANCE CURVE

SA451-CF8

Condition/Ht: ANNEALED 10000 HRS AT 662 F

Form: Pipe

Kc: NA

Reference: REG02

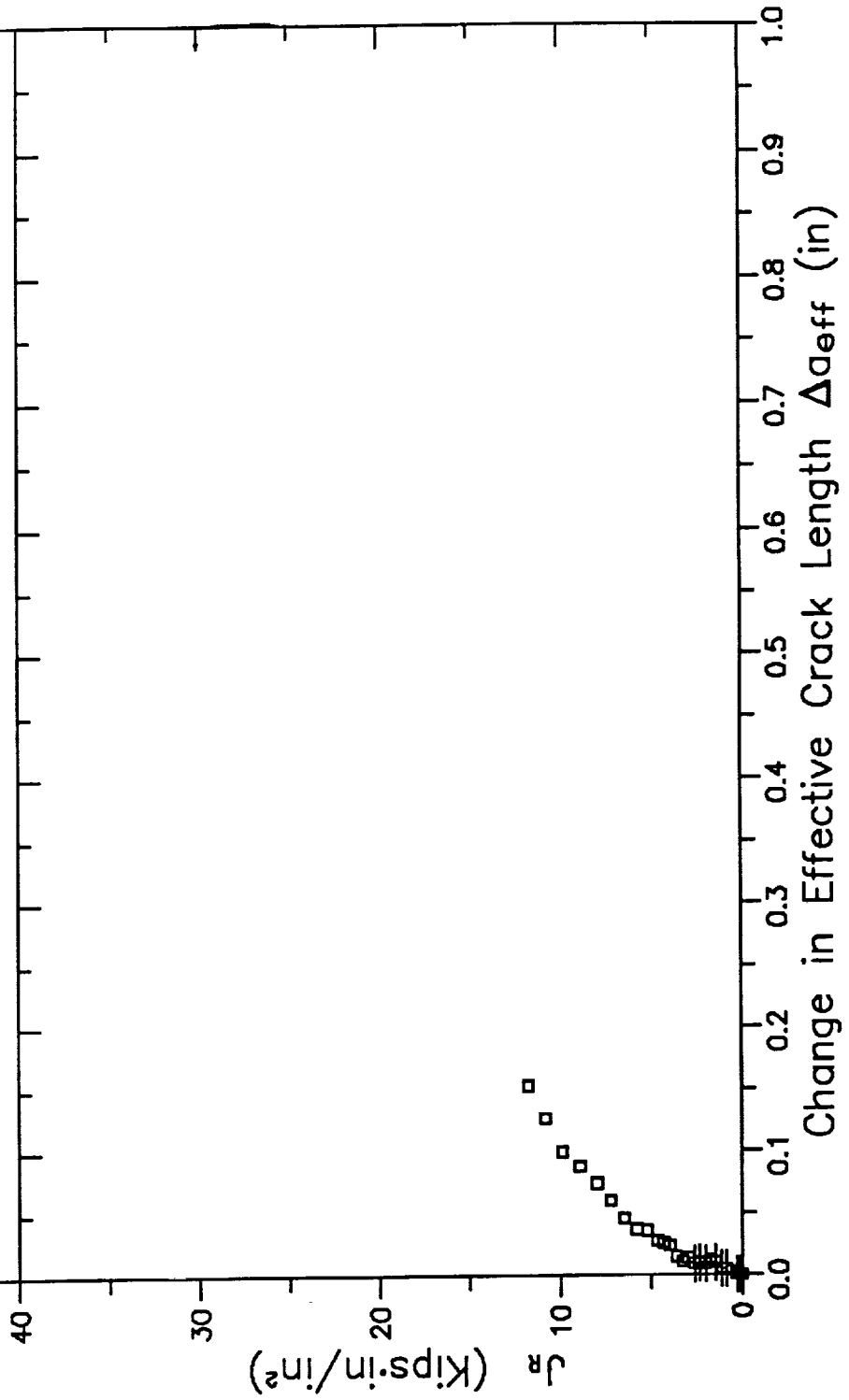
Environment: Unknown; 77°F

Type: Compact Specimen (Side Grooved)

Specimen Orientation: L-C

Specimen Thickness: 1 in.

Specimen Width: 2 in.





# RESISTANCE CURVE

SA451-CF8

Condition/Ht: ANNEALED 10000 HRS AT 662 F

Form: Pipe

Kc: NA

Reference: REG02

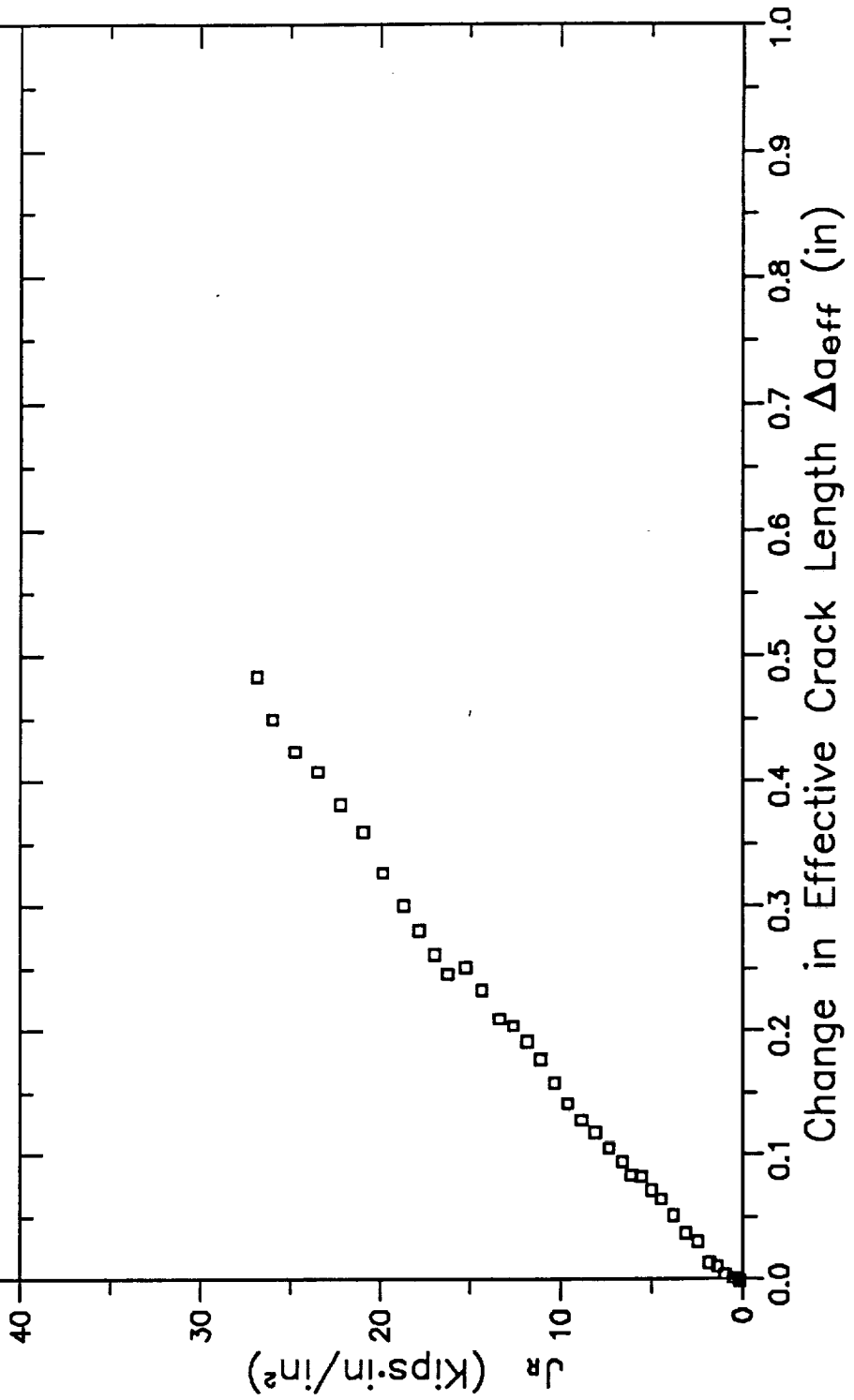
Environment: Unknown; 77°F

Type: Compact Specimen (Side Grooved)

Specimen Orientation: C-L

Specimen Thickness: 1 in.

Specimen Width: 2 in.



# RESISTANCE CURVE

SA451-CF8

Condition/Ht: ANNEALED 10000 HRS AT 662 F

Form: Pipe

Kc: NA

Reference: REG02

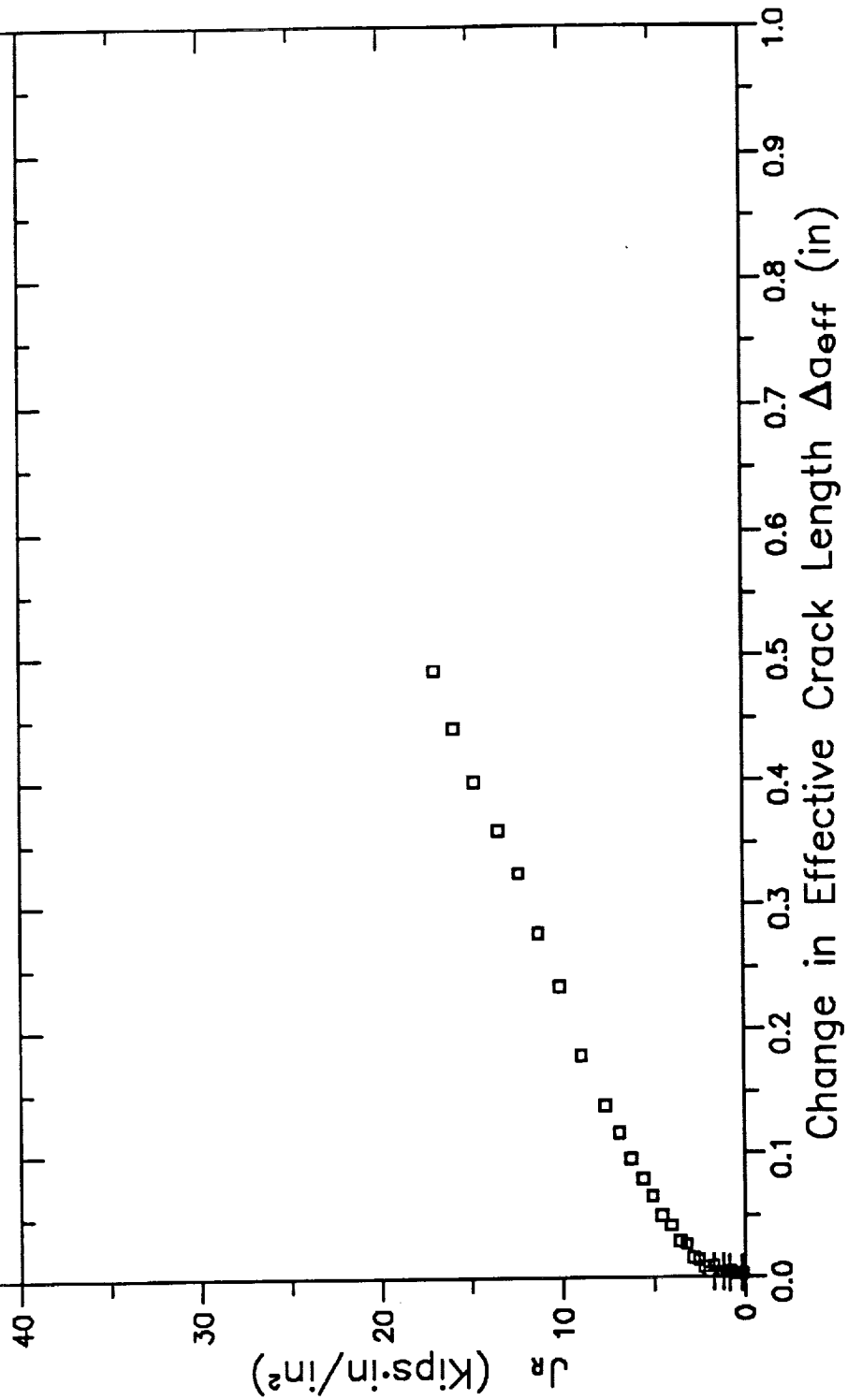
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)

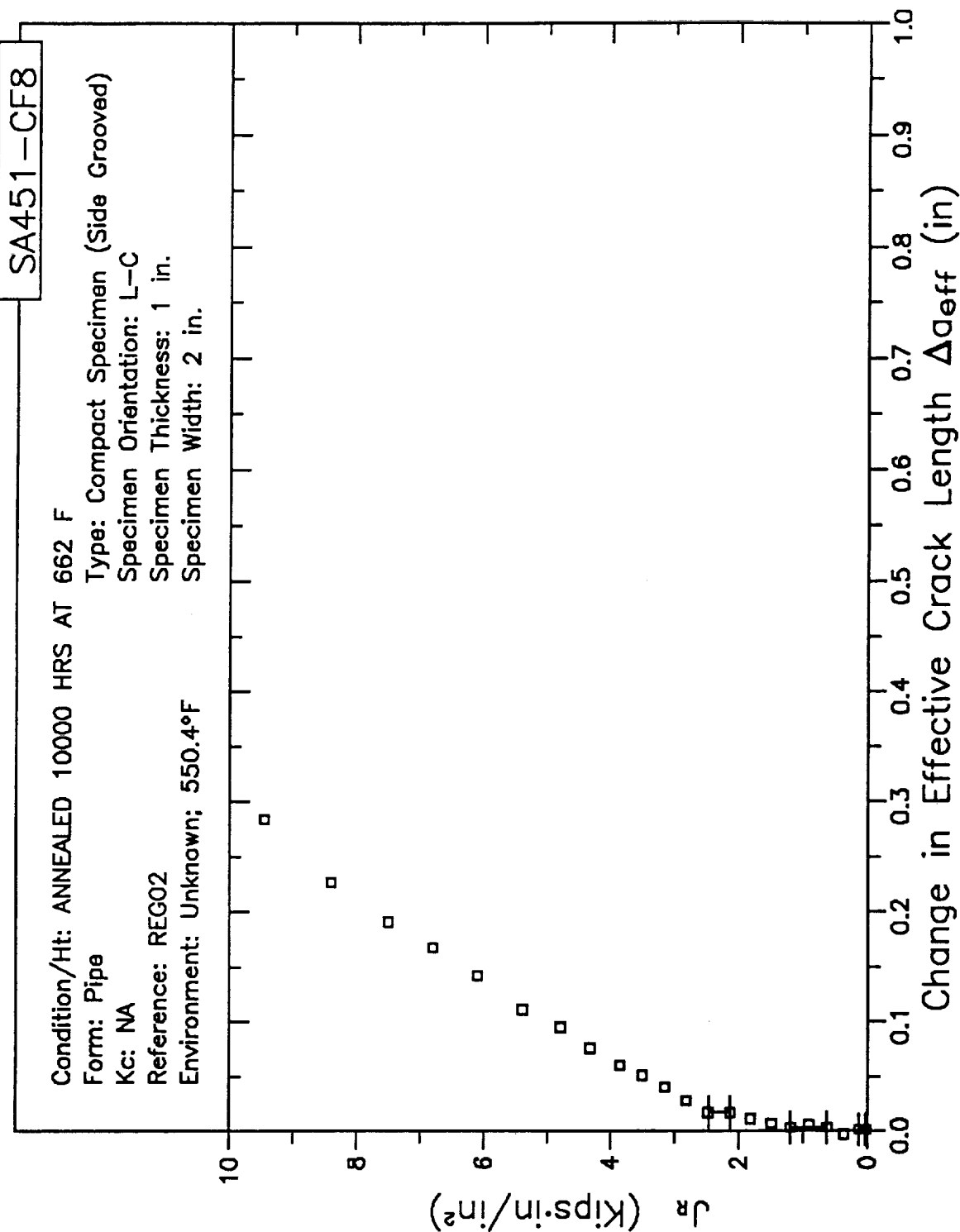
Specimen Orientation: L-C

Specimen Thickness: 1 in.

Specimen Width: 2 in.



# RESISTANCE CURVE



# RESISTANCE CURVE

SA451-CF8

Condition/Ht: ANNEALED 10000 HRS AT 752 F

Form: Pipe

Kc: NA

Reference: REG02

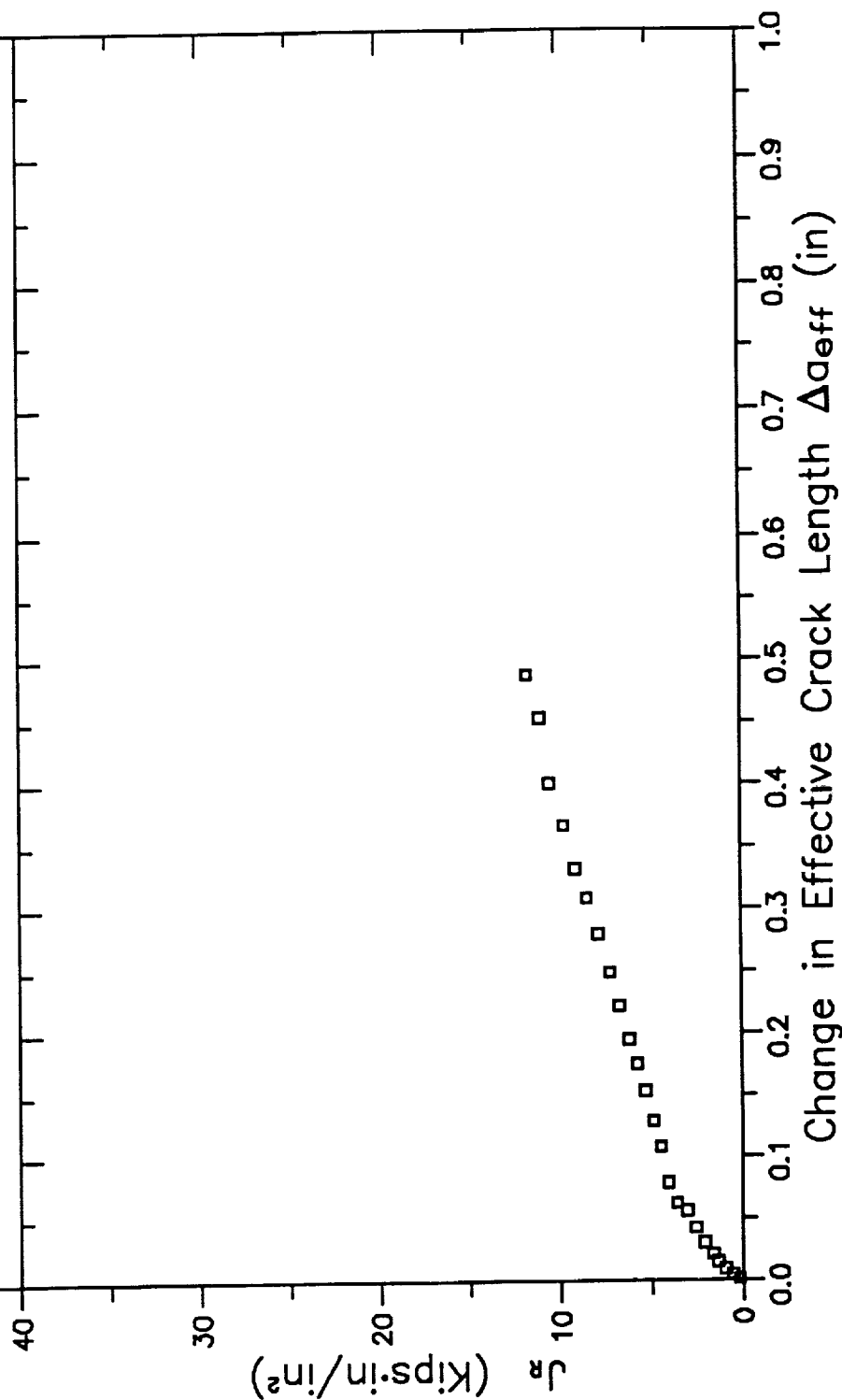
Environment: Unknown; 77°F

Type: Compact Specimen (Side Grooved)

Specimen Orientation: L-C

Specimen Thickness: 1 in.

Specimen Width: 2 in.



# RESISTANCE CURVE

SA451-CF8

Condition/Ht: ANNEALED 10000 HRS AT 752 F

Form: Pipe

Kc: NA

Reference: REG02

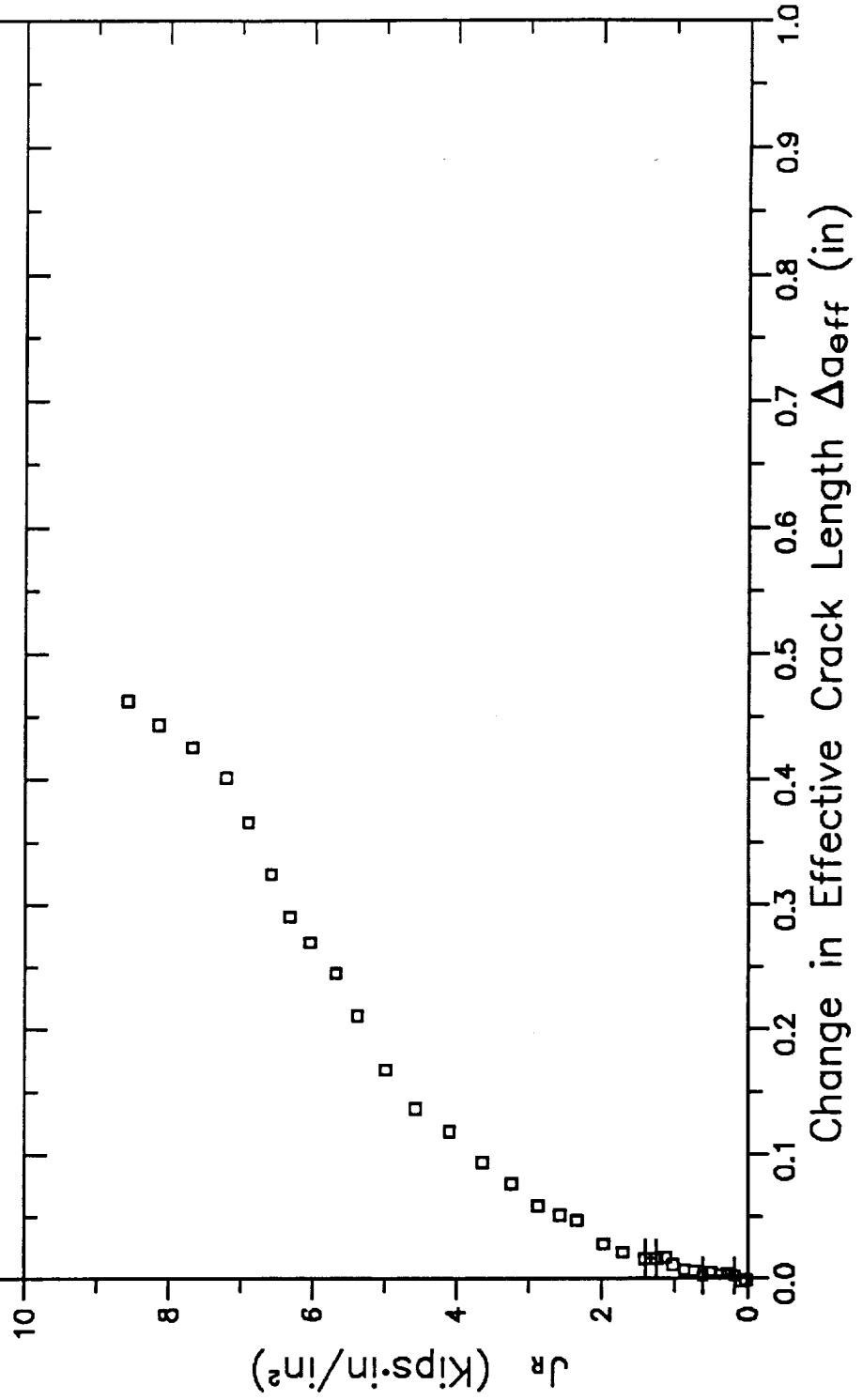
Environment: Unknown; 77°F

Type: Compact Specimen (Side Grooved)

Specimen Orientation: L-C

Specimen Thickness: 1 in.

Specimen Width: 2 in.



# RESISTANCE CURVE

SA451-CF8

Condition/Ht: ANNEALED 10000 HRS AT 752 F

Form: Pipe

Kc: NA

Reference: REG02

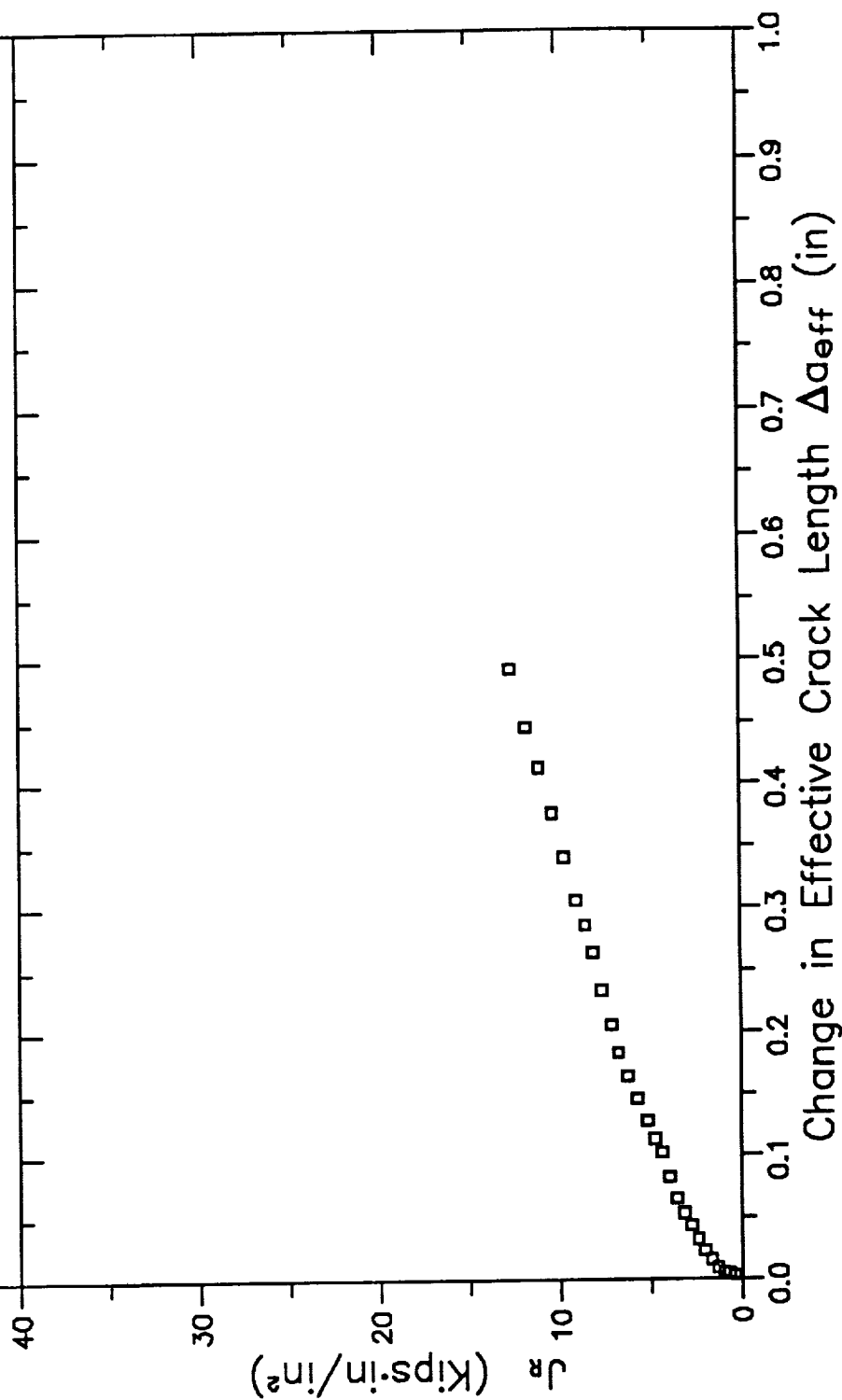
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)

Specimen Orientation: L-C

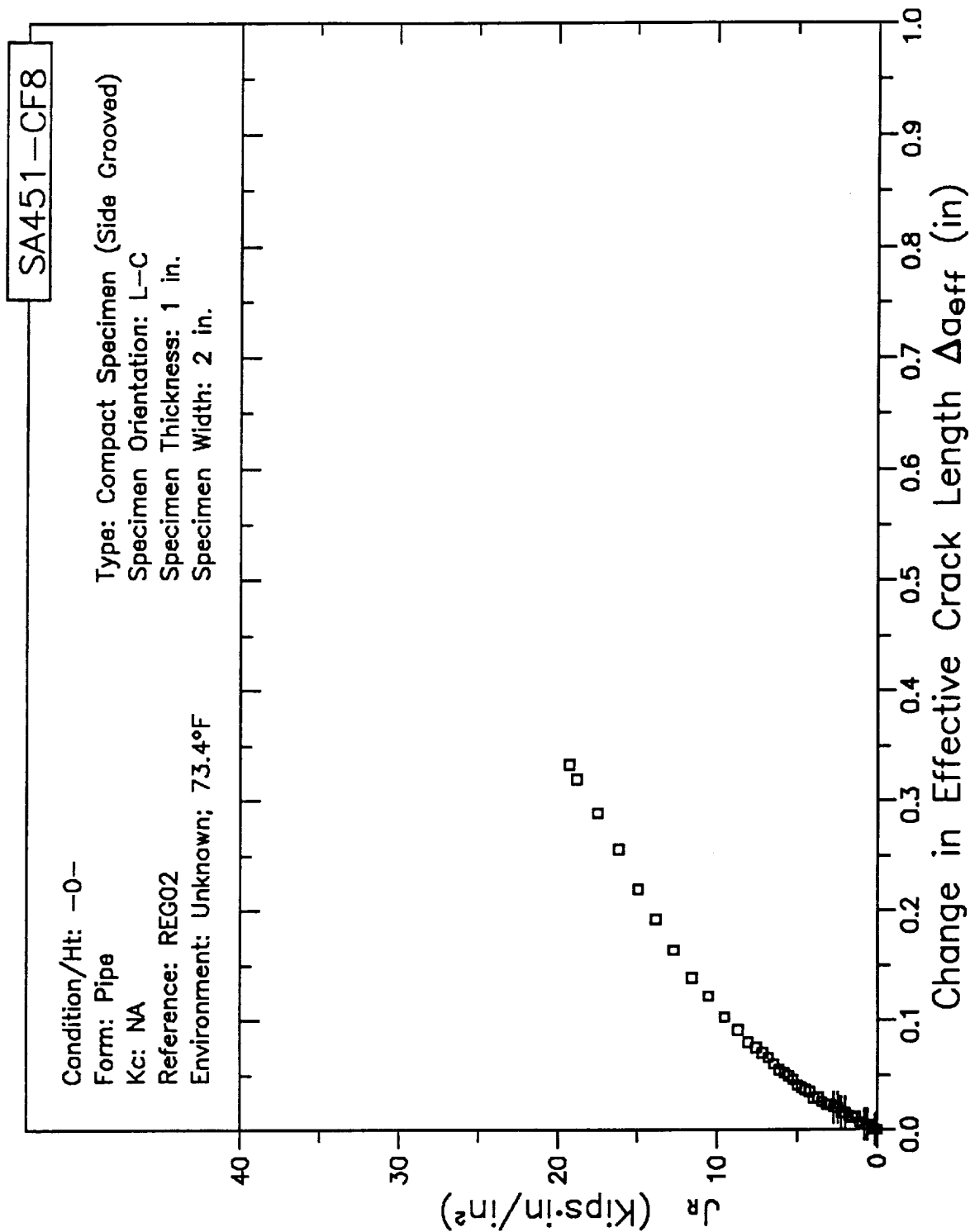
Specimen Thickness: 1 in.

Specimen Width: 2 in.



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# RESISTANCE CURVE

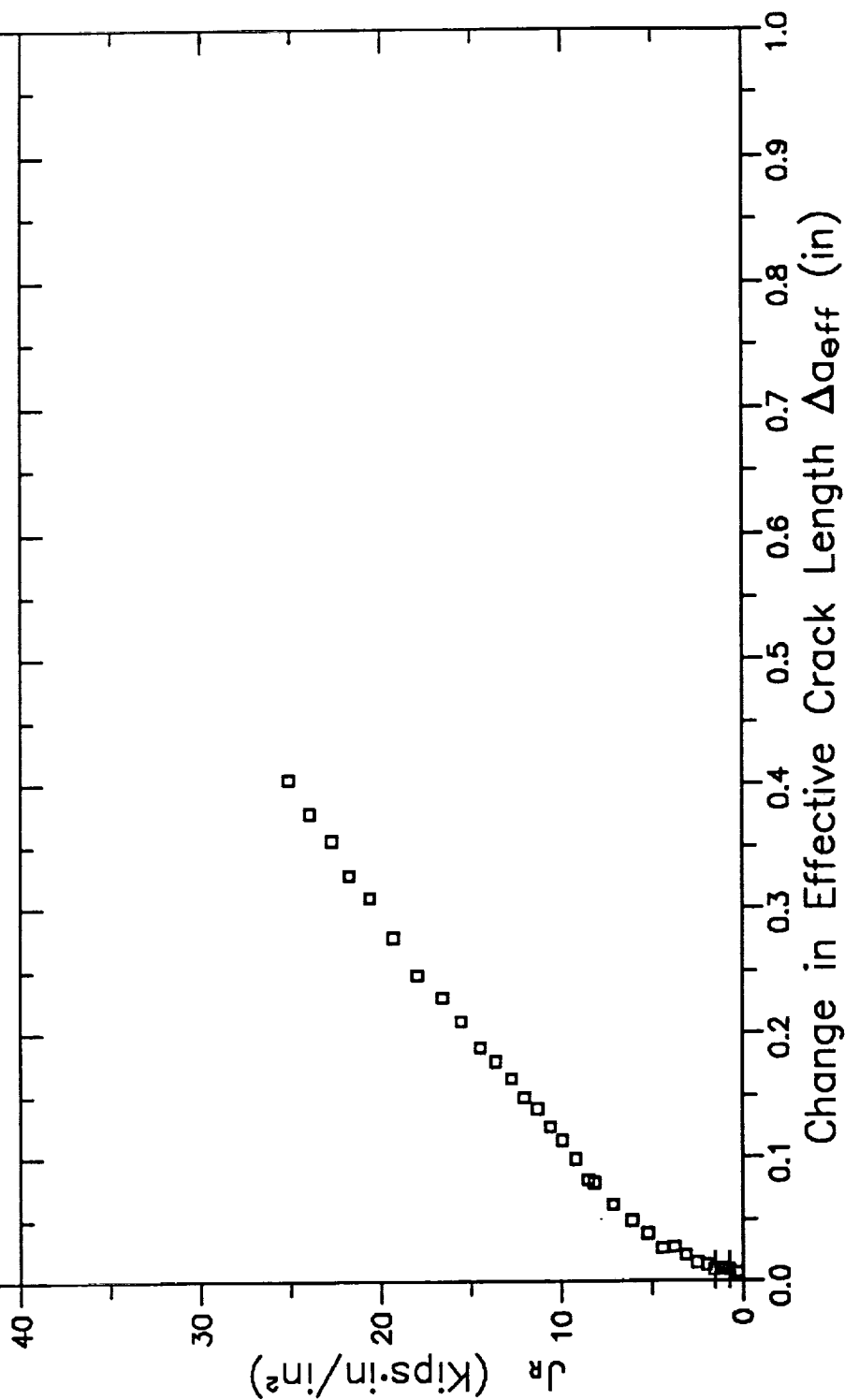


# RESISTANCE CURVE

SA451-CF8

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG02  
Environment: Unknown; 73.4°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: C-L  
Specimen Thickness: 0.996 in.  
Specimen Width: 1.996 in.



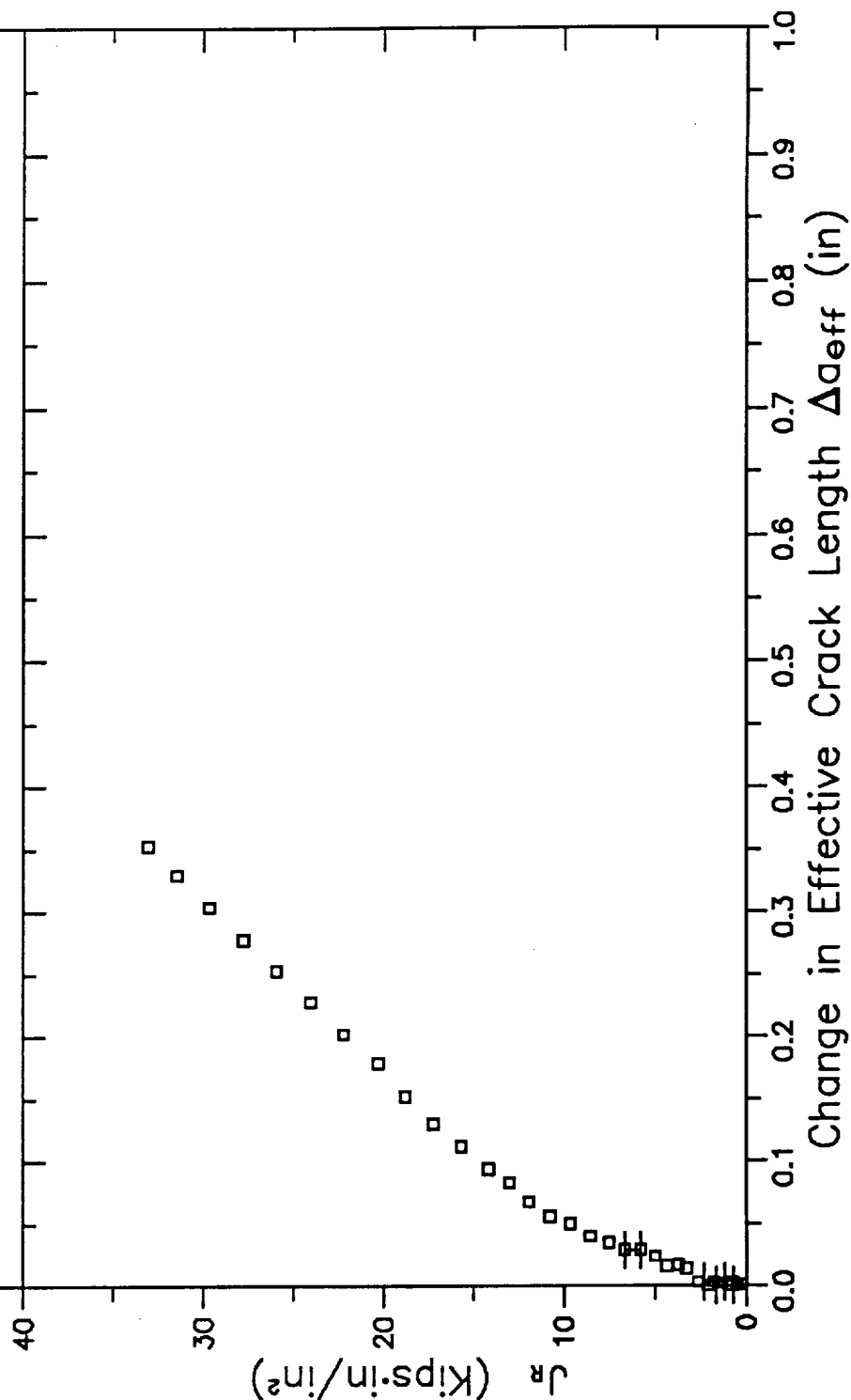


# RESISTANCE CURVE

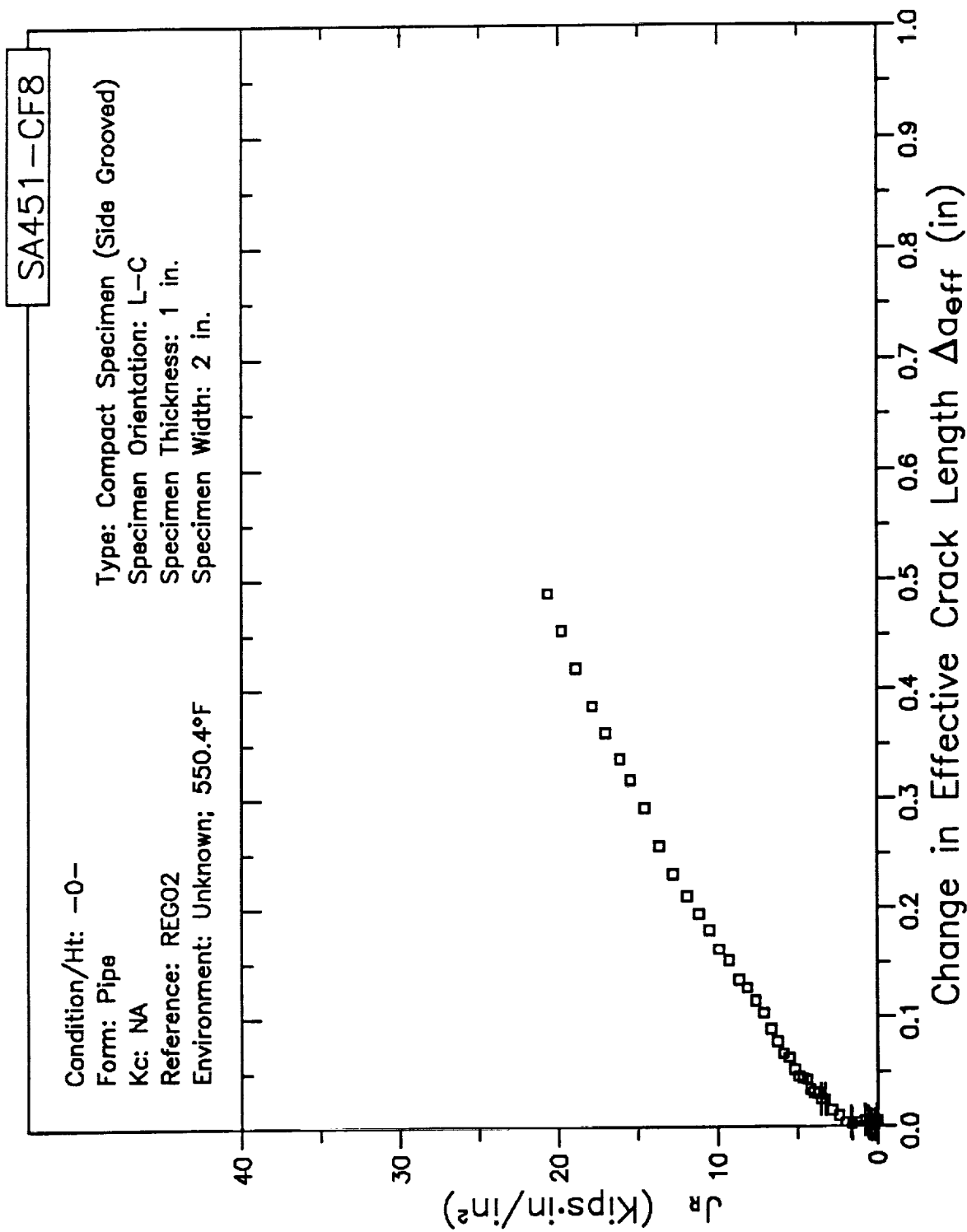
SA451-CF8

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG02  
Environment: Unknown; 77°F

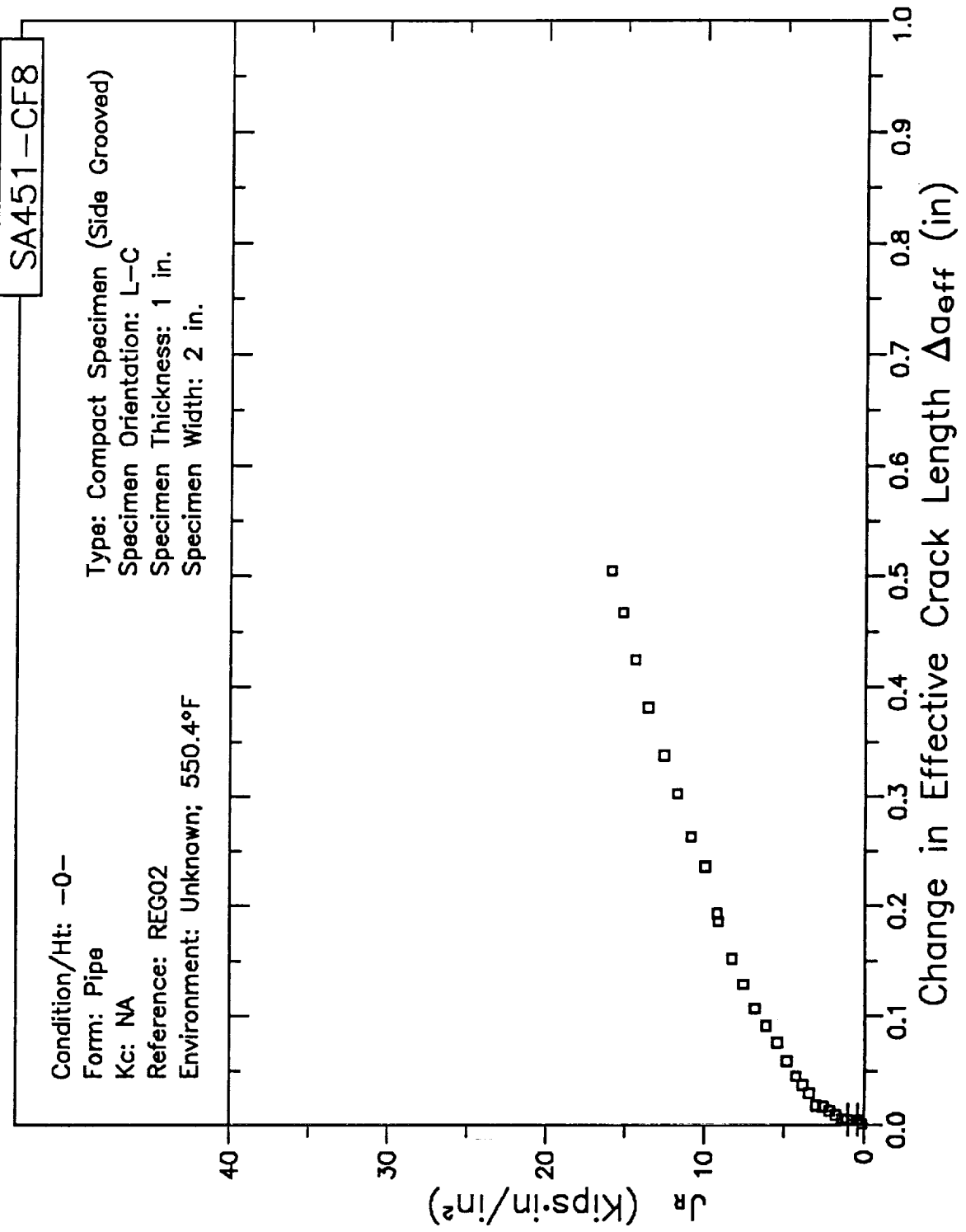
Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 1 in.  
Specimen Width: 2 in.



# RESISTANCE CURVE



# RESISTANCE CURVE



# RESISTANCE CURVE

TYPE 304

Condition/Ht: FLATTENED AND STRESS RELIEF AT 800 F (2HR)

Form: Pipe

Kc: NA

Reference: REG01

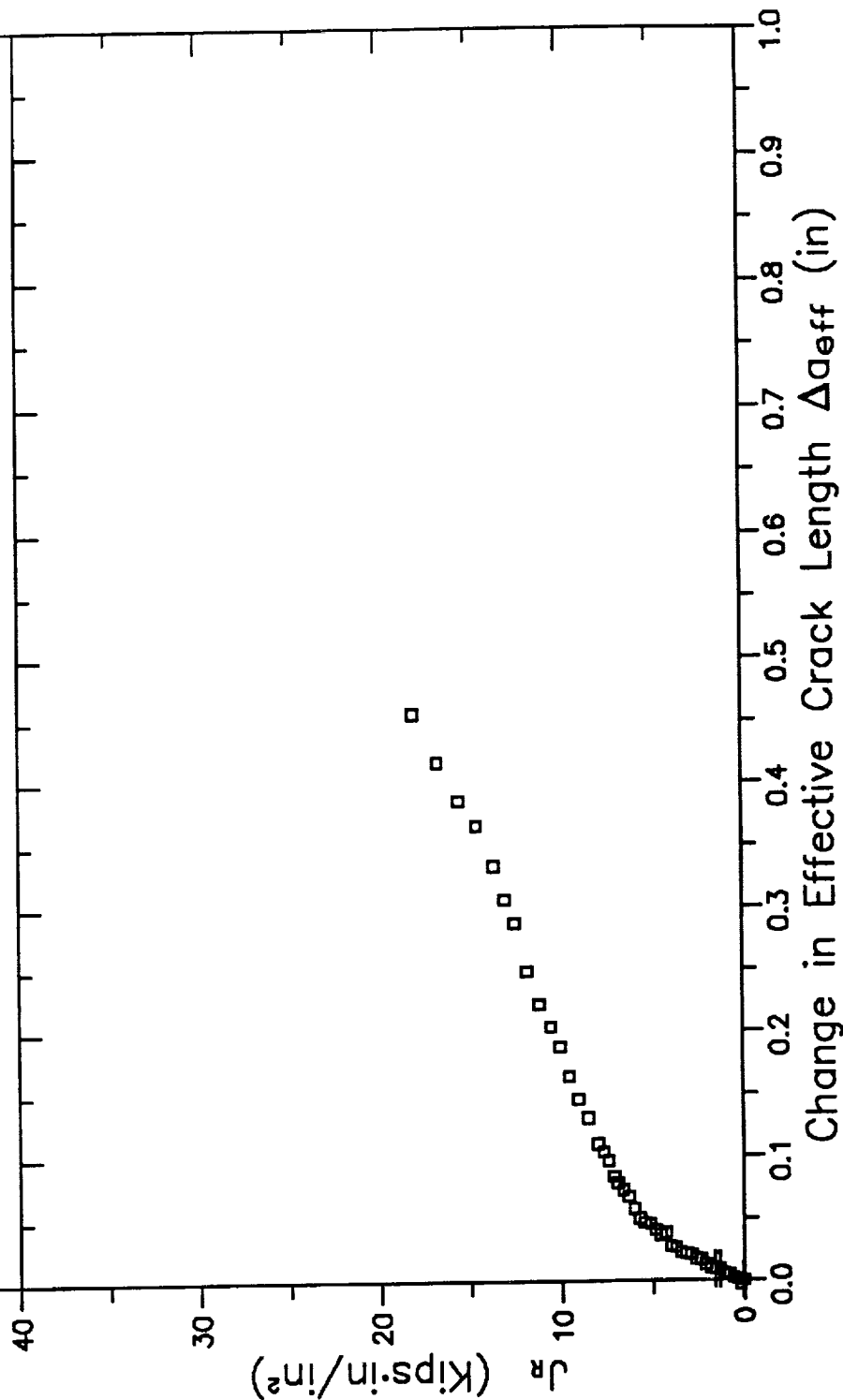
Environment: Unknown; 73.4°F

Type: Compact Specimen (Side Grooved)

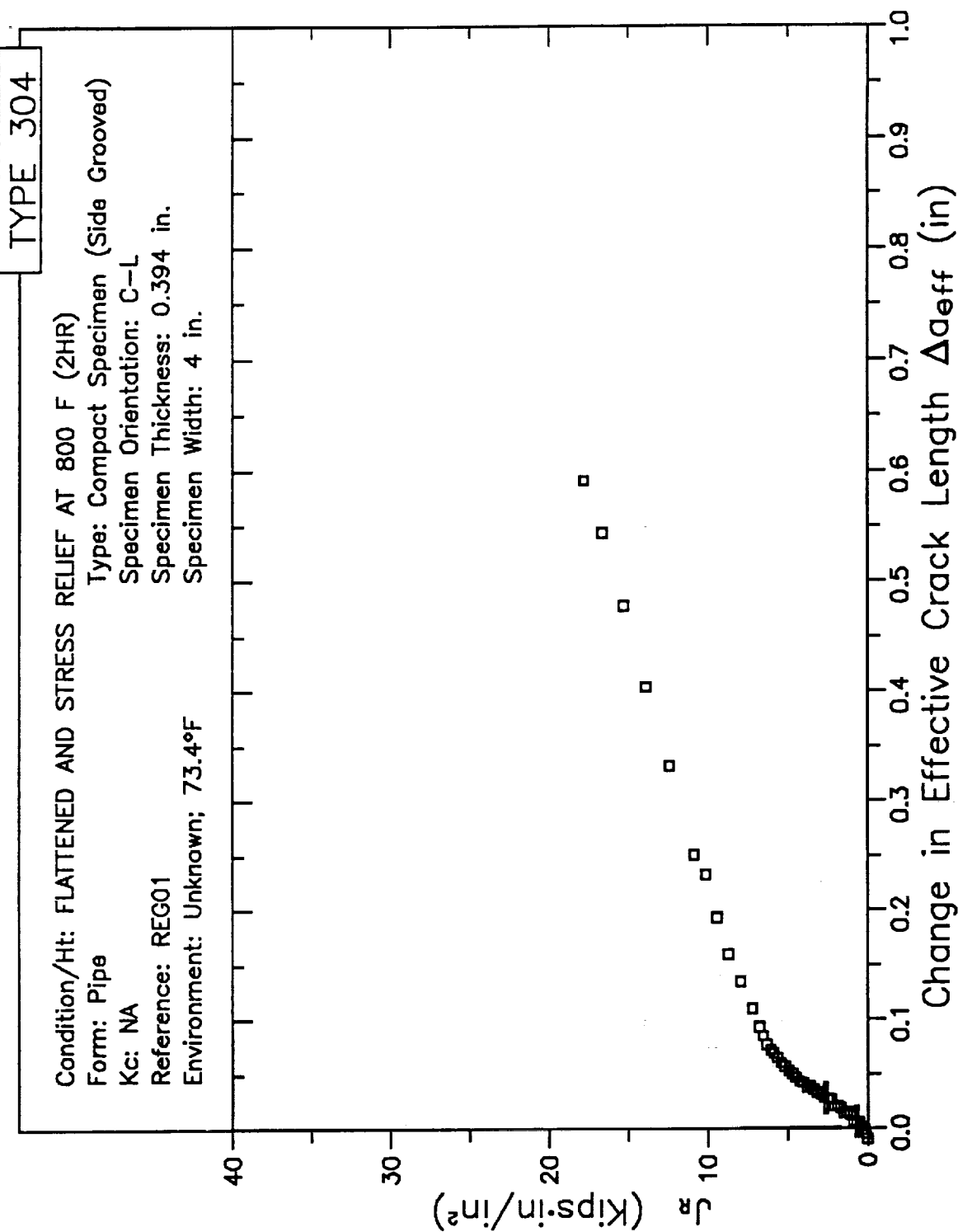
Specimen Orientation: C-L

Specimen Thickness: 0.394 in.

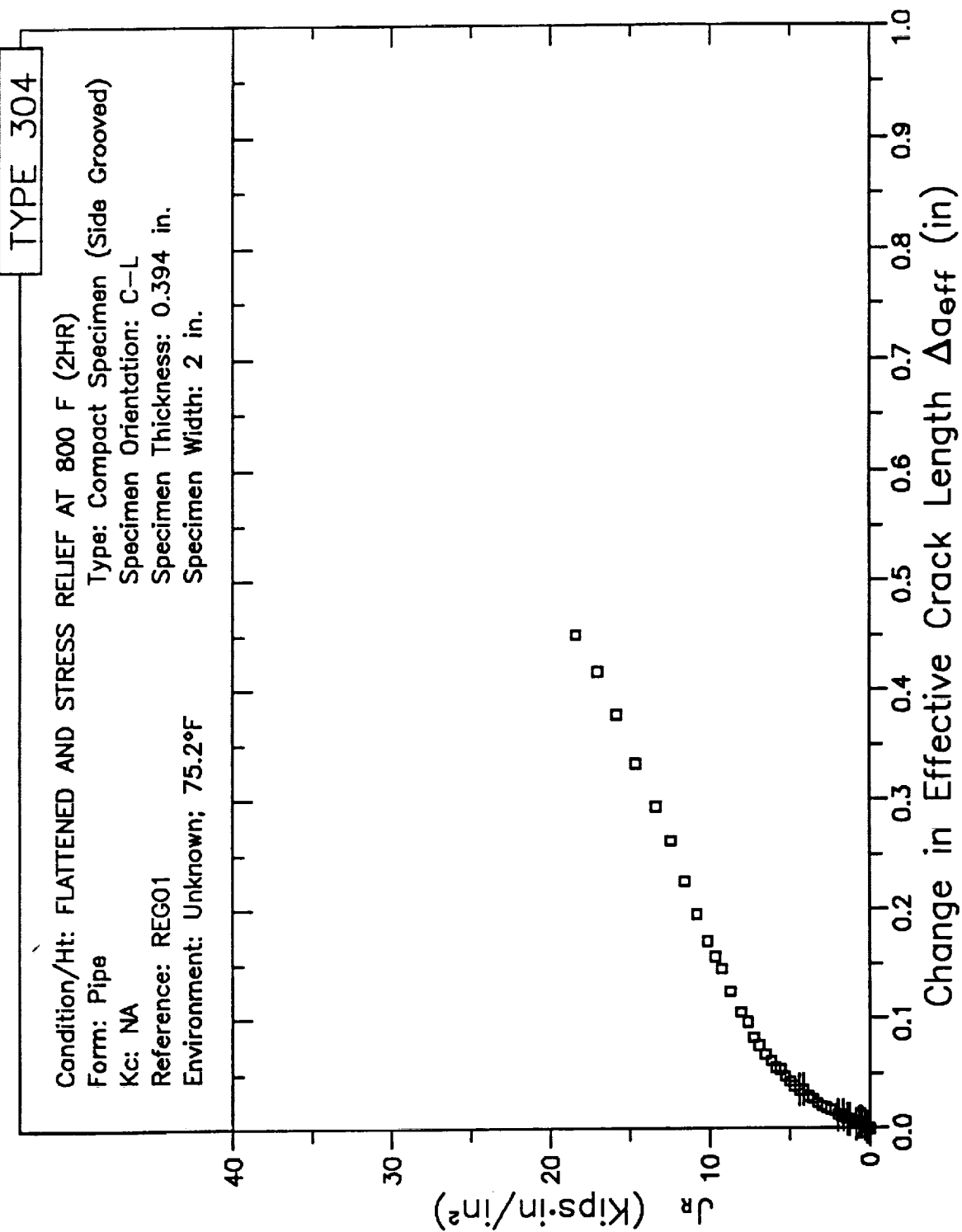
Specimen Width: 2 in.



# RESISTANCE CURVE



# RESISTANCE CURVE



# RESISTANCE CURVE

TYPE 304

Condition/Ht: MECHANICALLY FLATTENED

Form: Pipe

Kc: NA

Reference: REG01

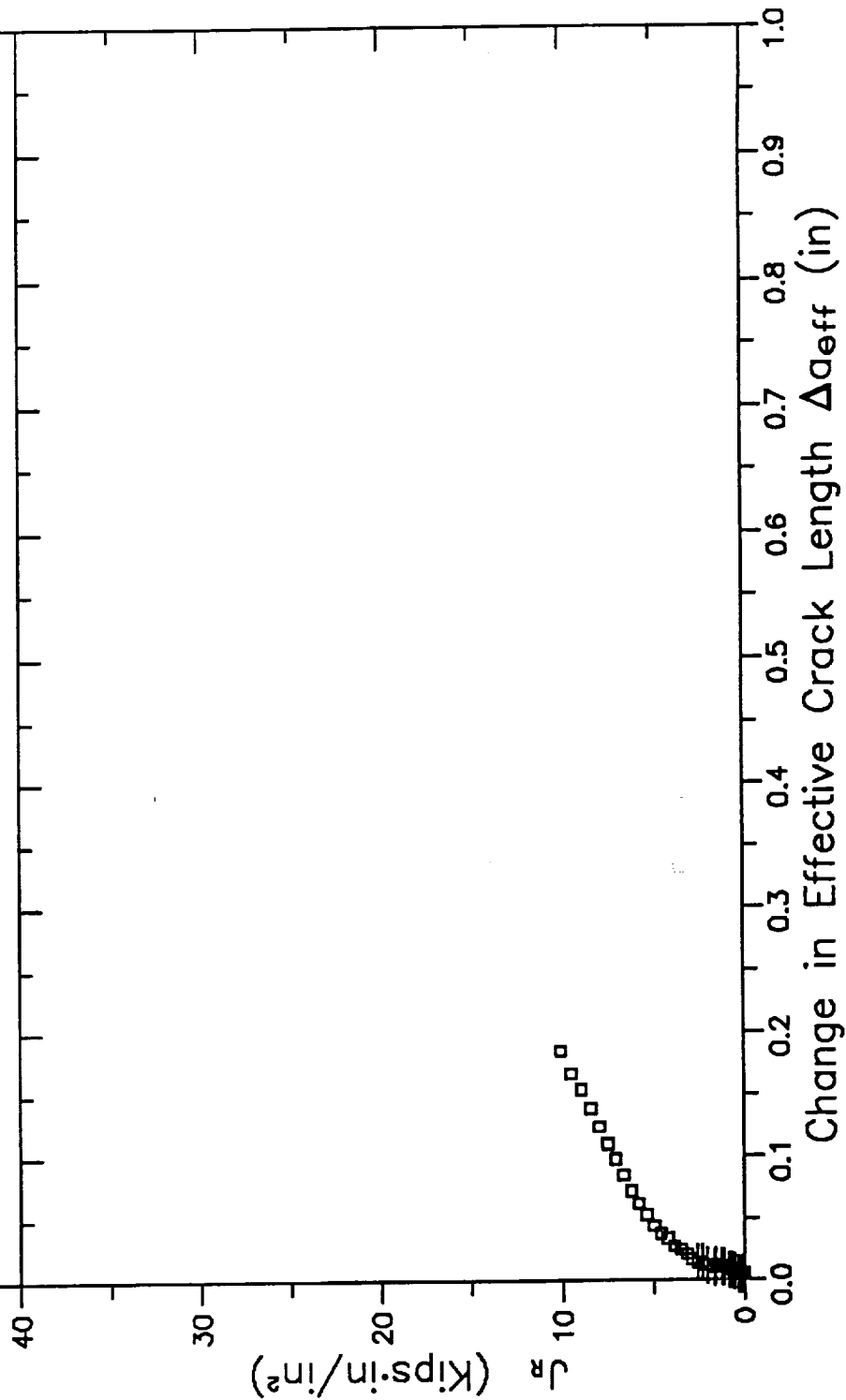
Environment: Unknown; 73.4°F

Type: Compact Specimen (Side Grooved)

Specimen Orientation: C-L

Specimen Thickness: 0.394 in.

Specimen Width: 2 in.



# RESISTANCE CURVE

TYPE 304

Condition/Ht: MECHANICALLY FLATTENED

Form: Pipe

Kc: NA

Reference: REG01

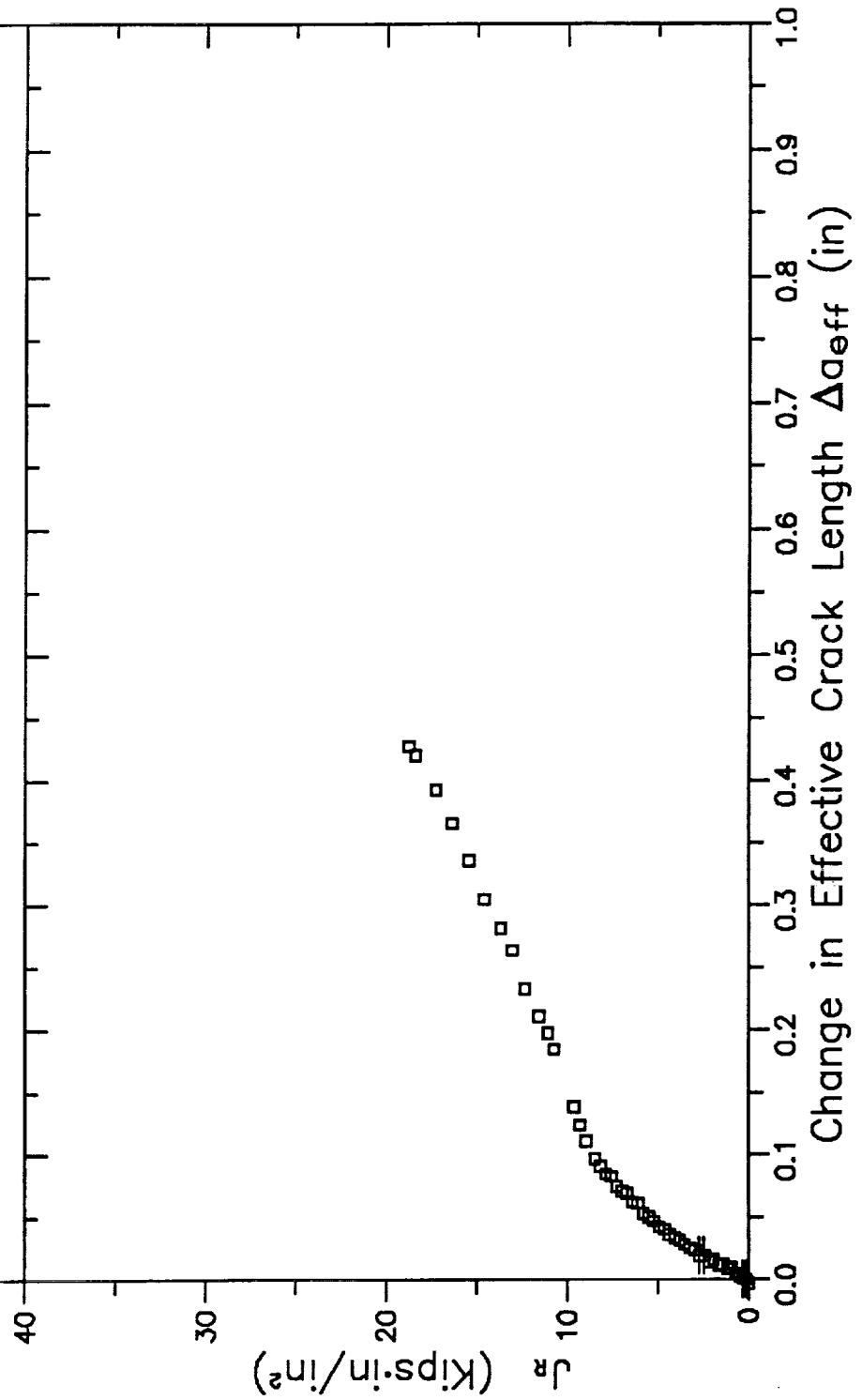
Environment: Unknown; 75.2°F

Type: Compact Specimen (Side Grooved)

Specimen Orientation: C-L

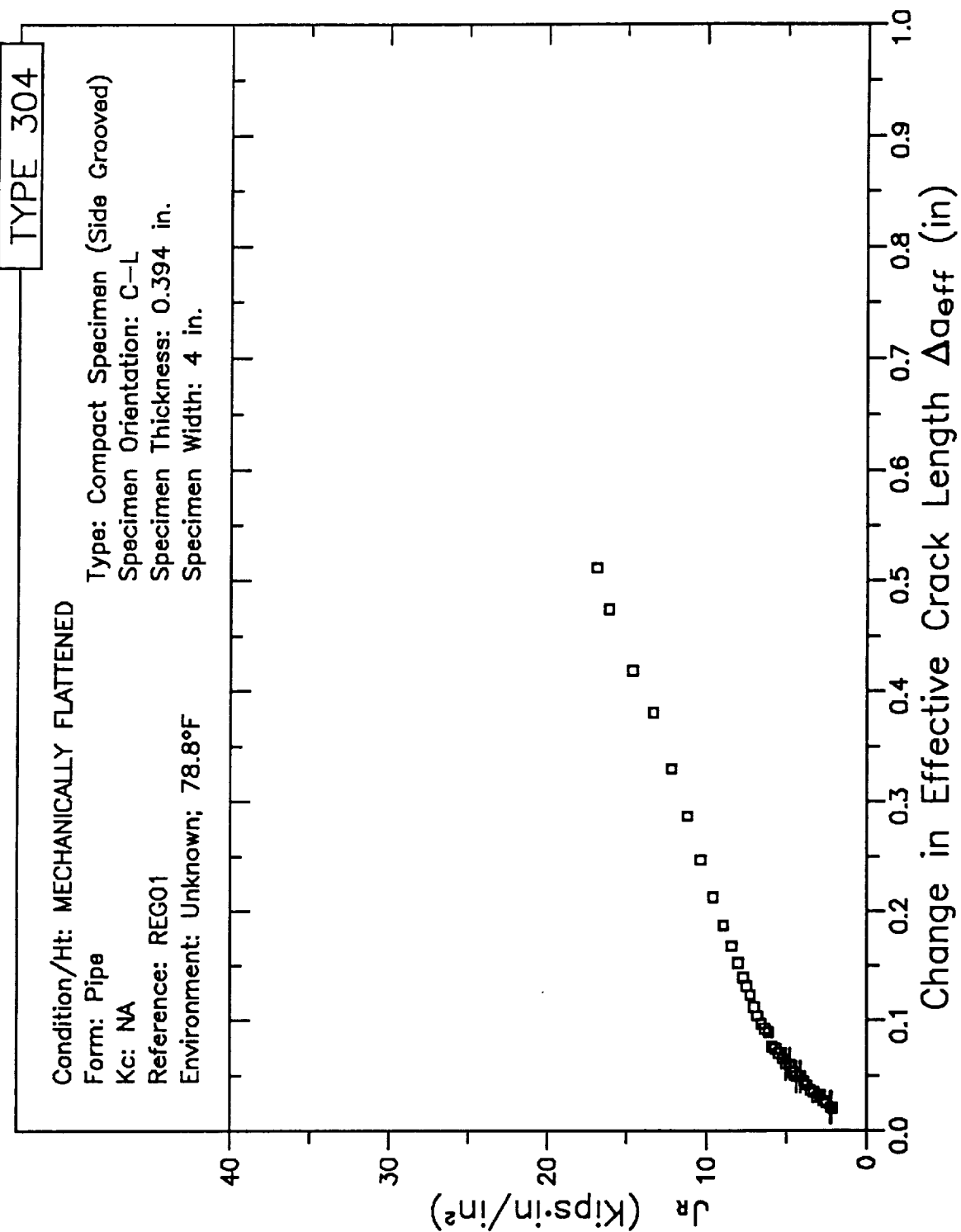
Specimen Thickness: 0.394 in.

Specimen Width: 2 in.

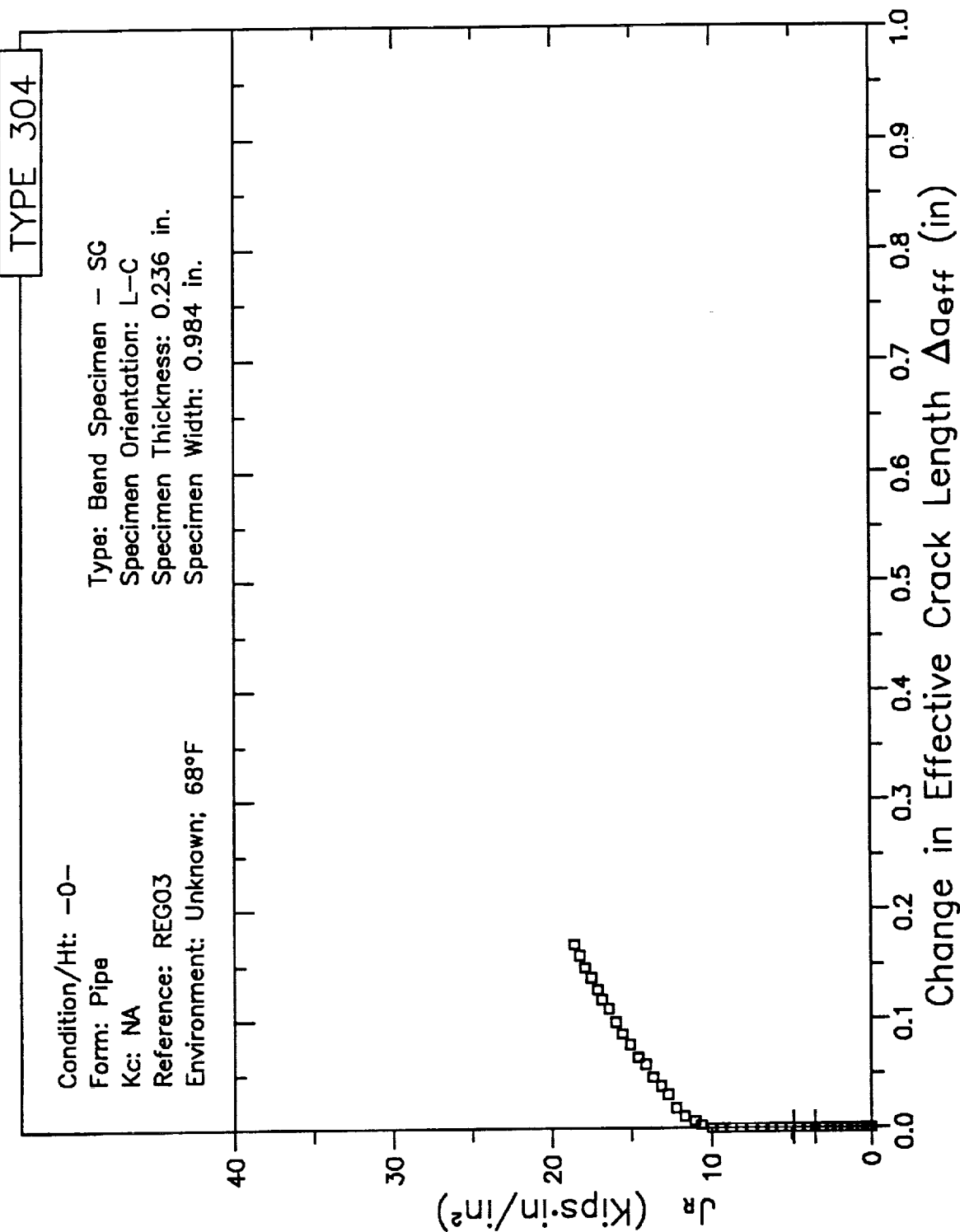




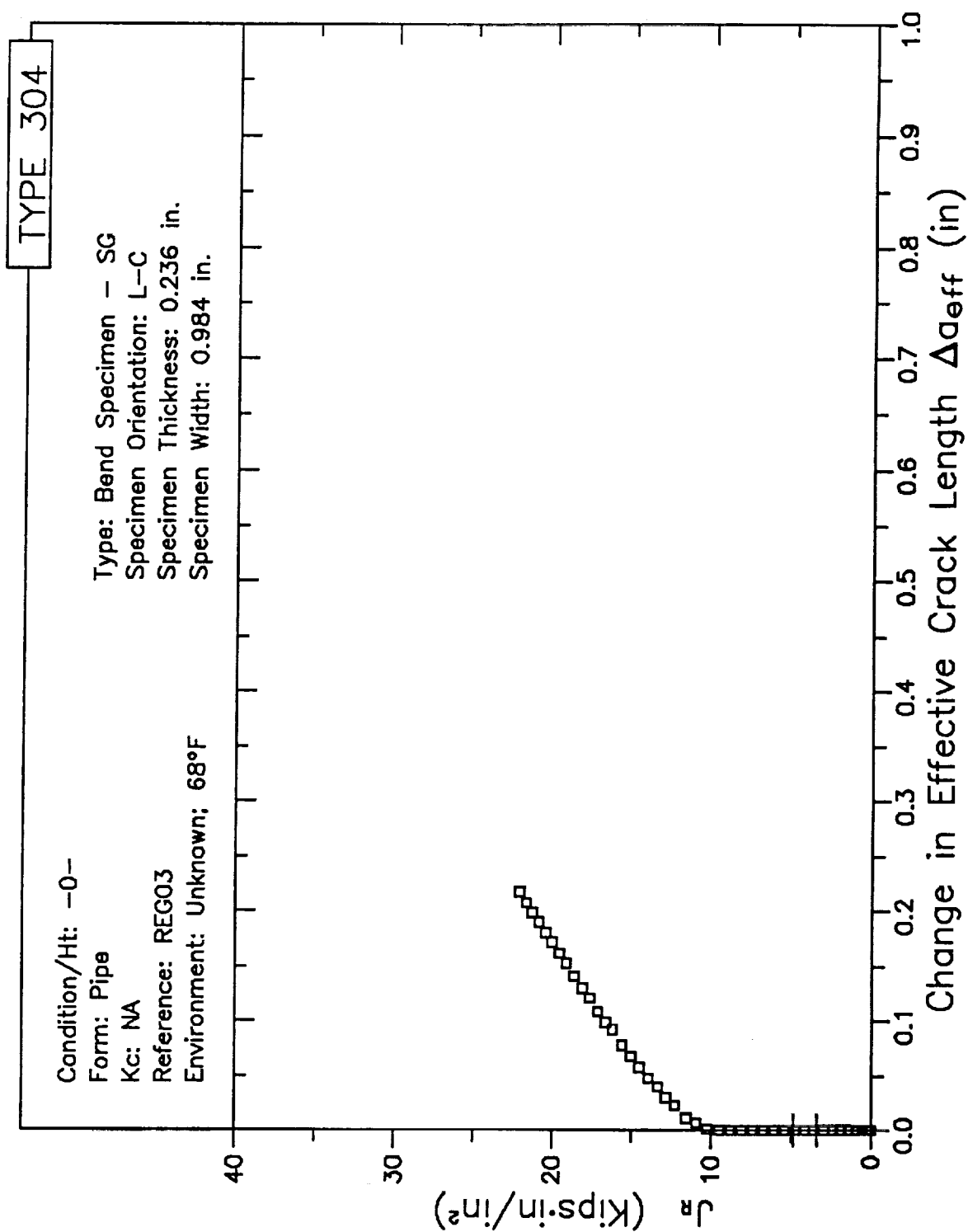
# RESISTANCE CURVE



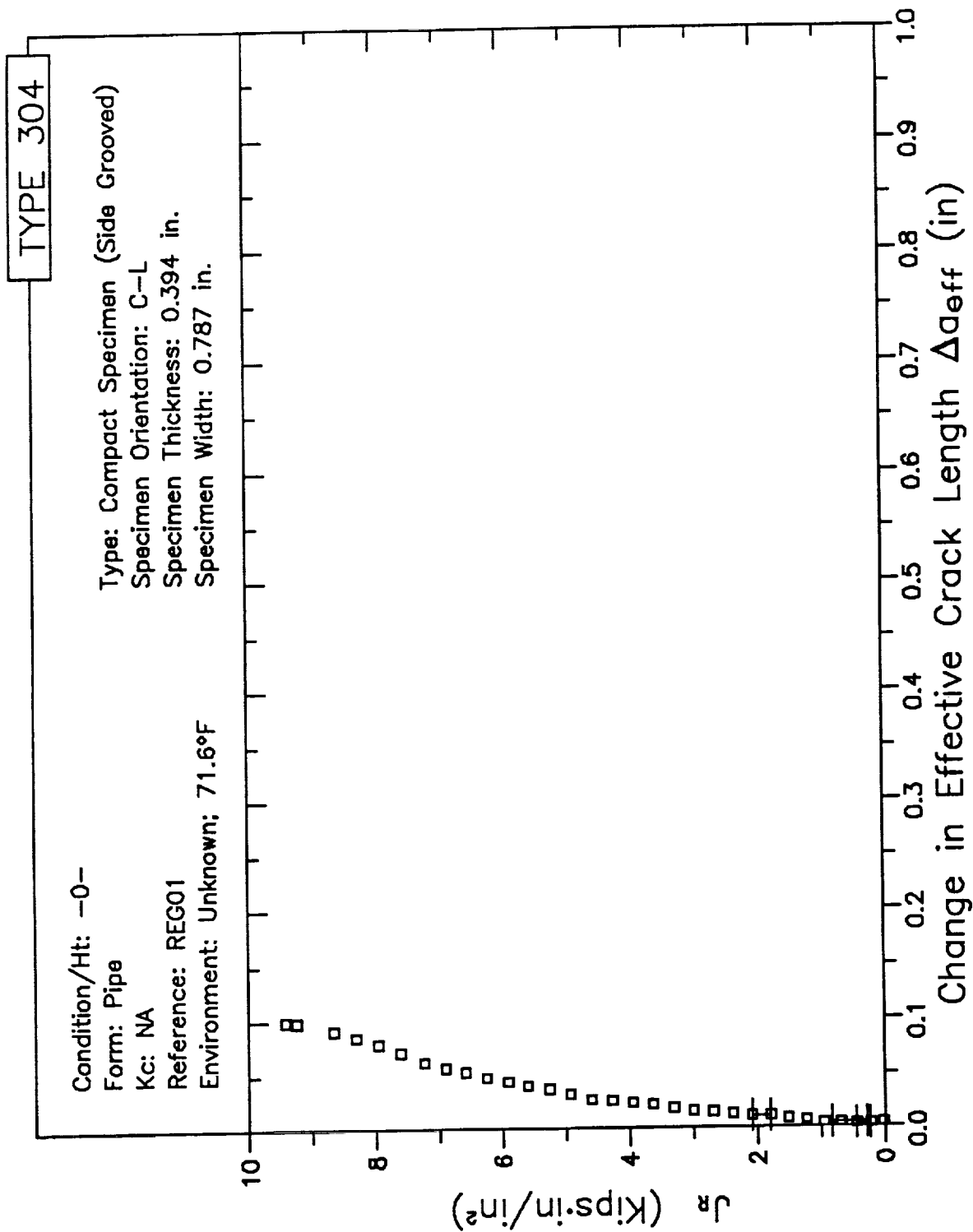
# RESISTANCE CURVE



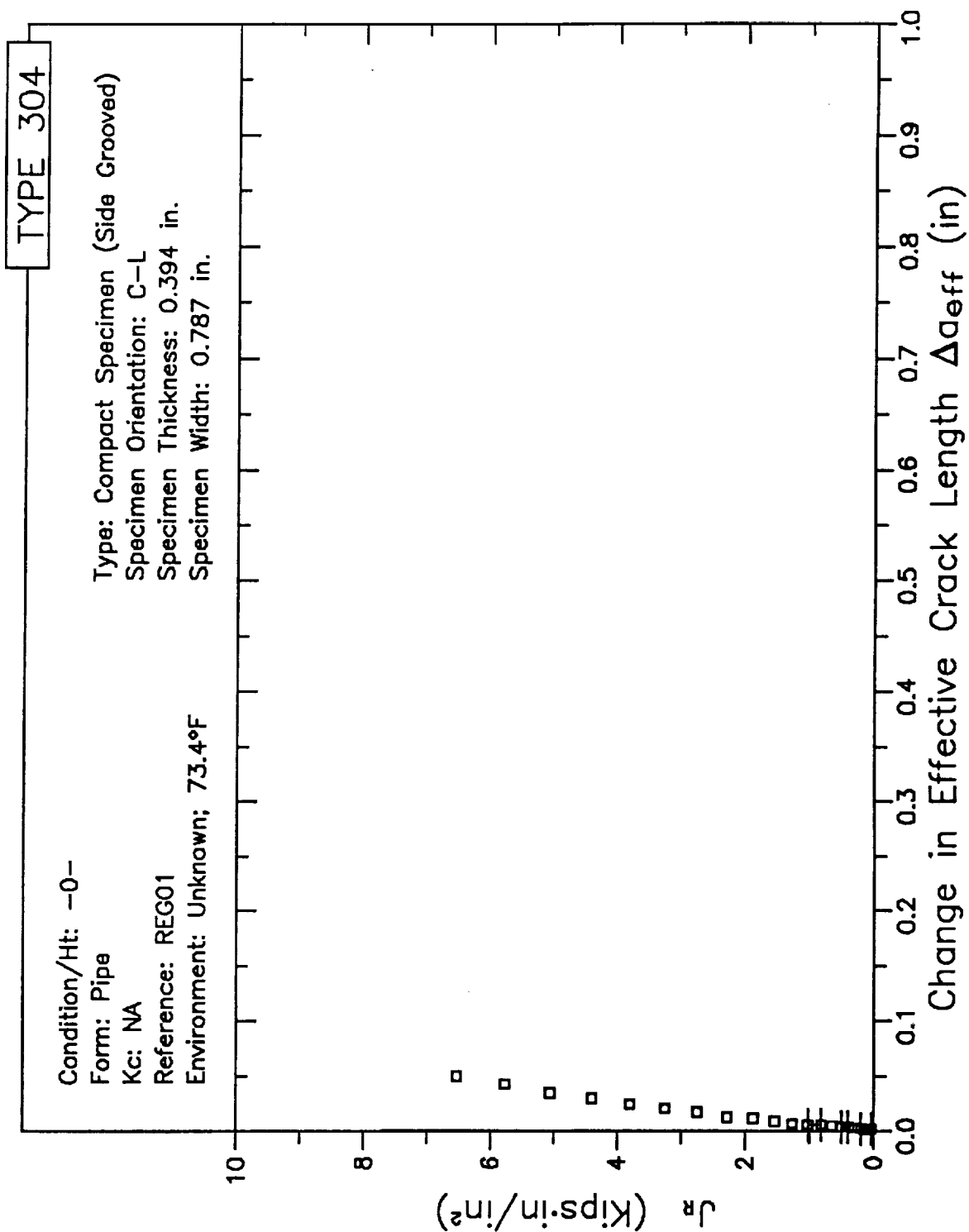
# RESISTANCE CURVE



# RESISTANCE CURVE



# RESISTANCE CURVE

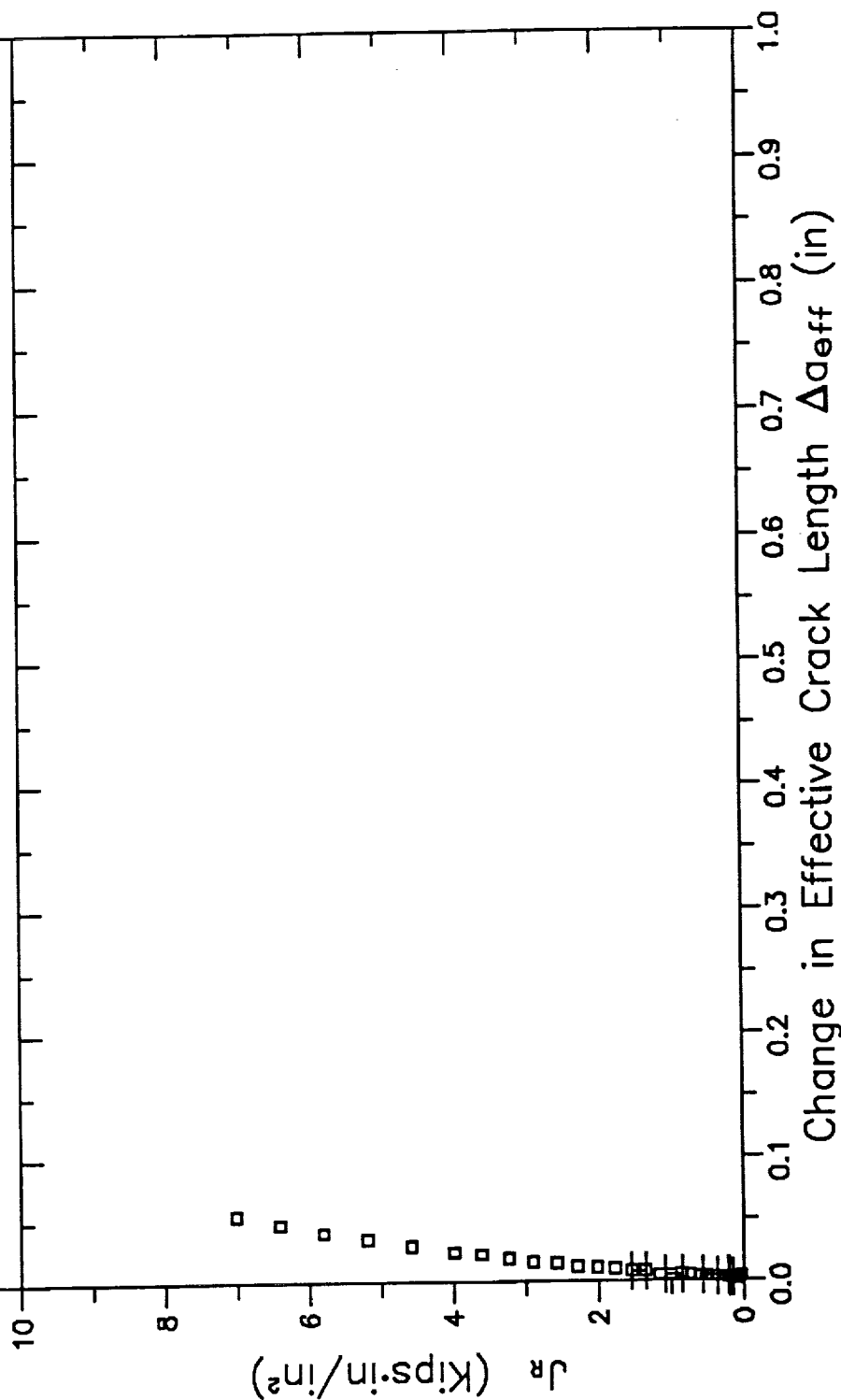


# RESISTANCE CURVE

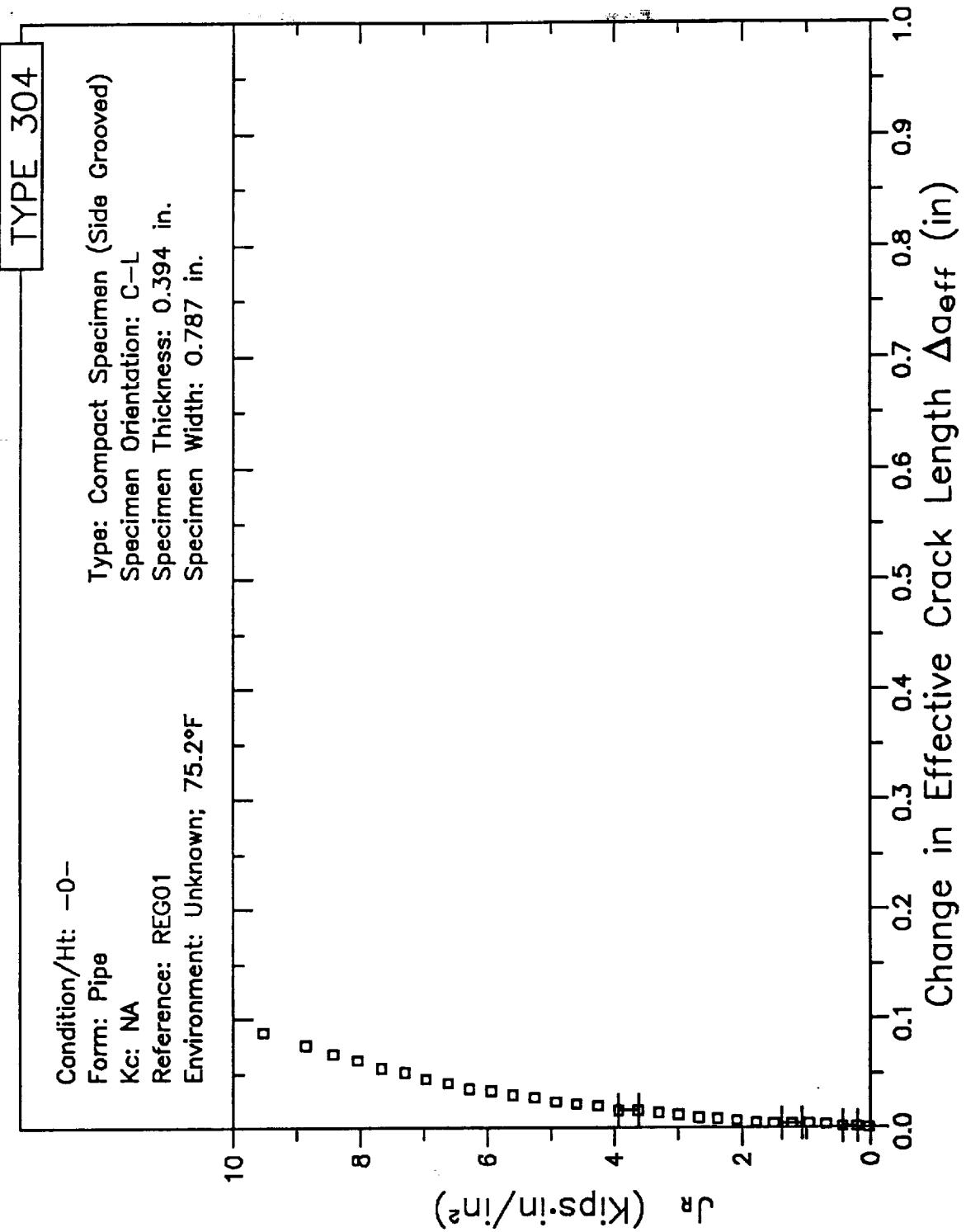
TYPE 304

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG01  
Environment: Unknown; 73.4°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: C-L  
Specimen Thickness: 0.394 in.  
Specimen Width: 0.787 in.



# RESISTANCE CURVE

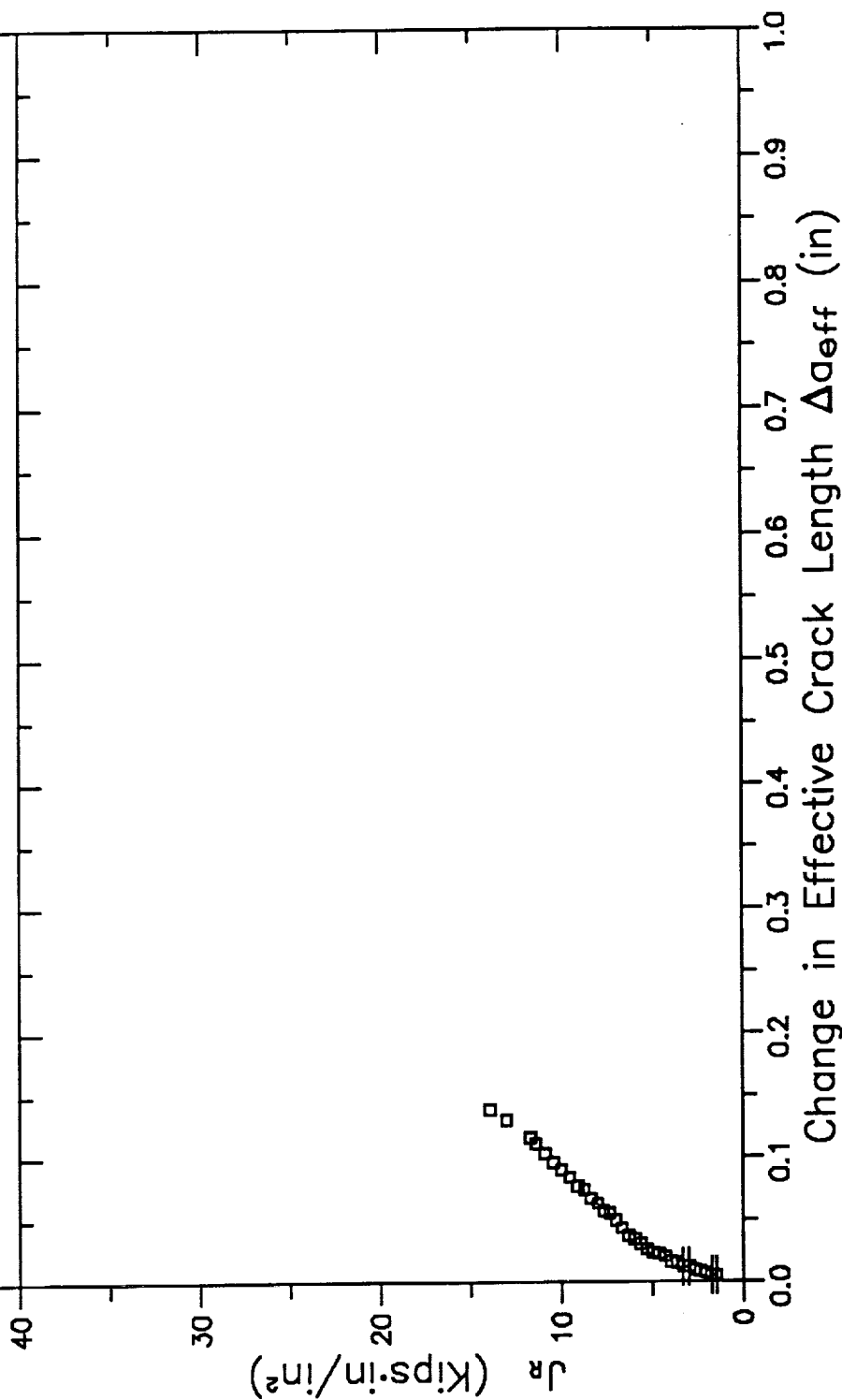


# RESISTANCE CURVE

TYPE 304

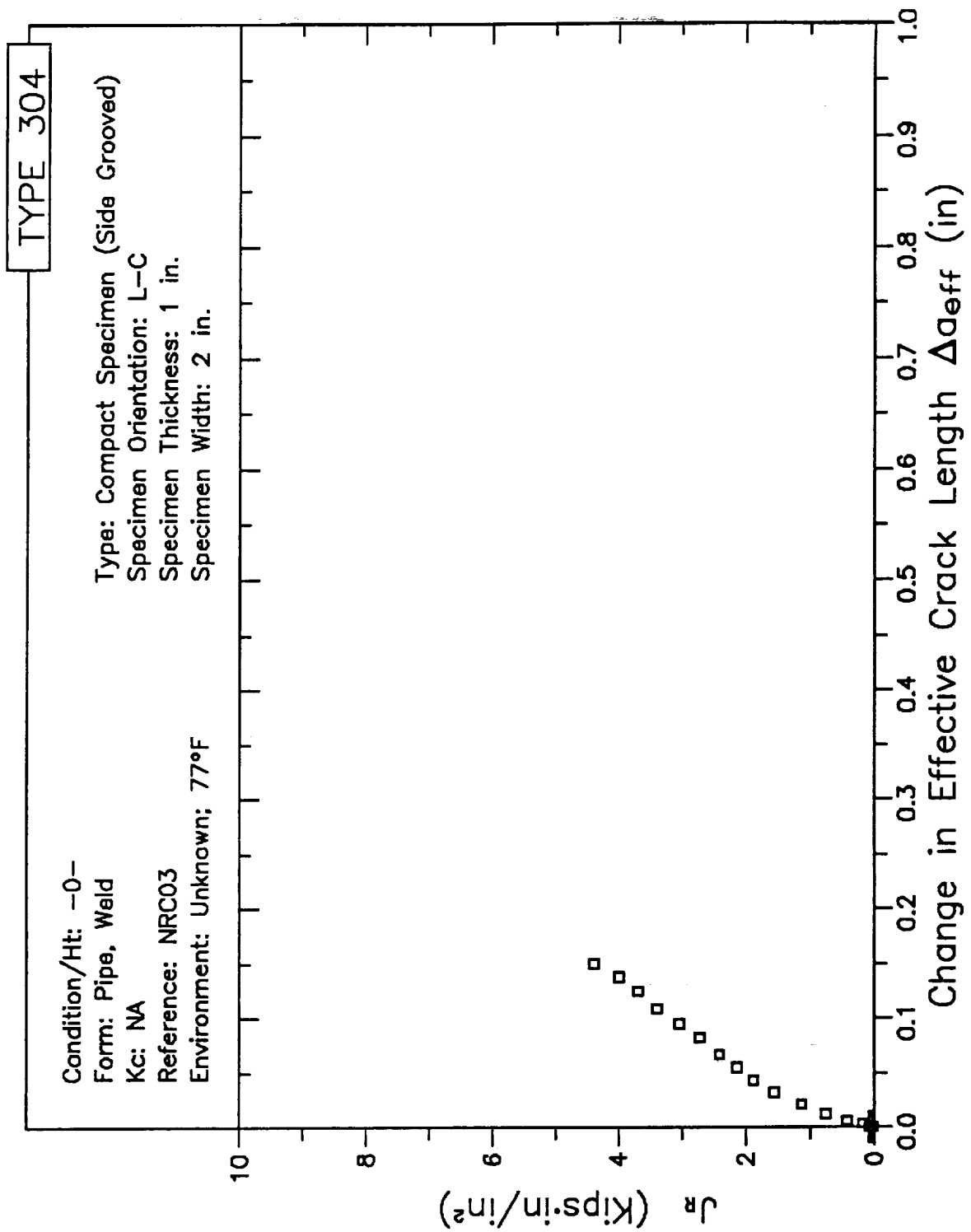
Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG01  
Environment: Unknown; 75.2°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: C-L  
Specimen Thickness: 0.394 in.  
Specimen Width: 0.787 in.





# RESISTANCE CURVE

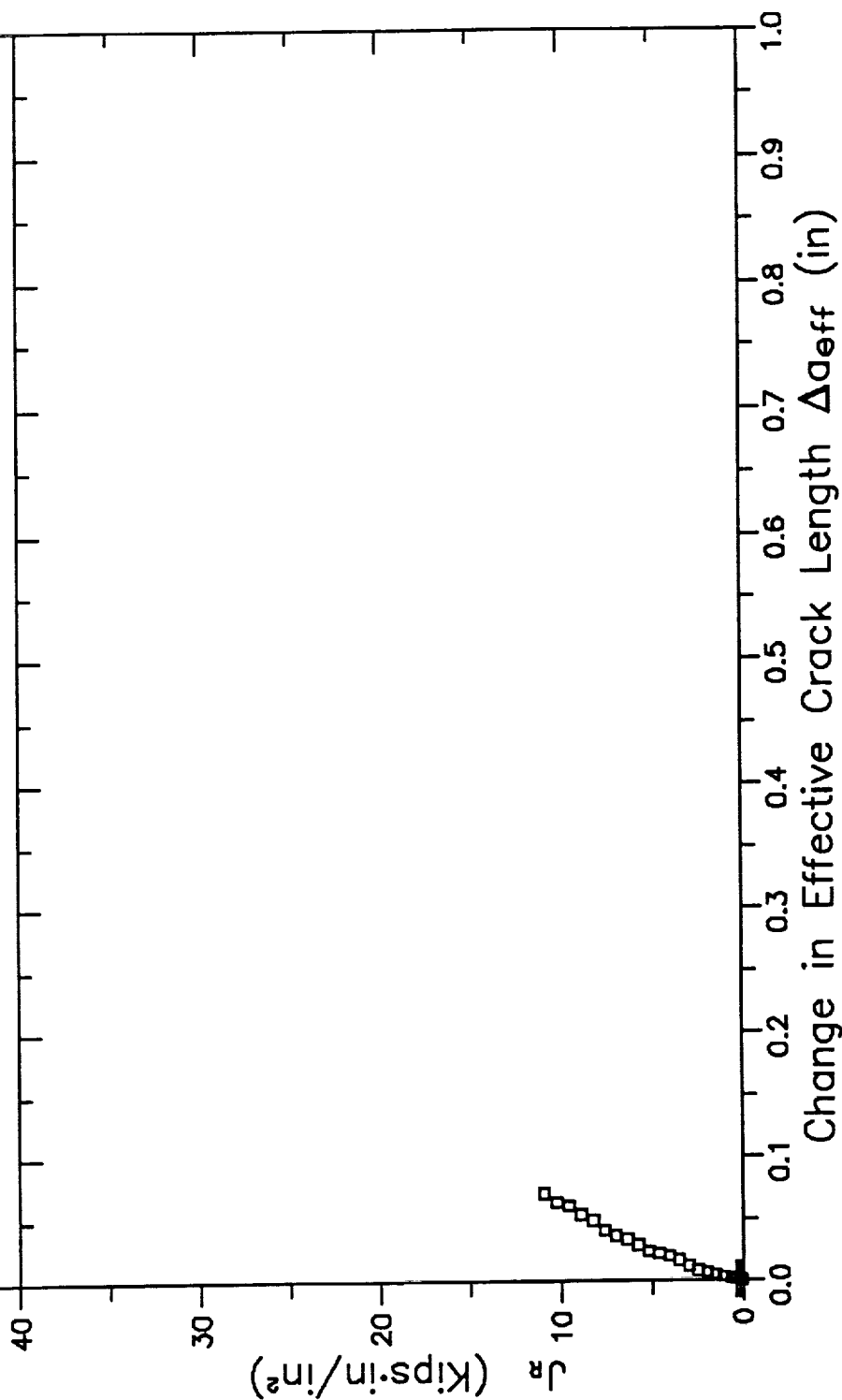


# RESISTANCE CURVE

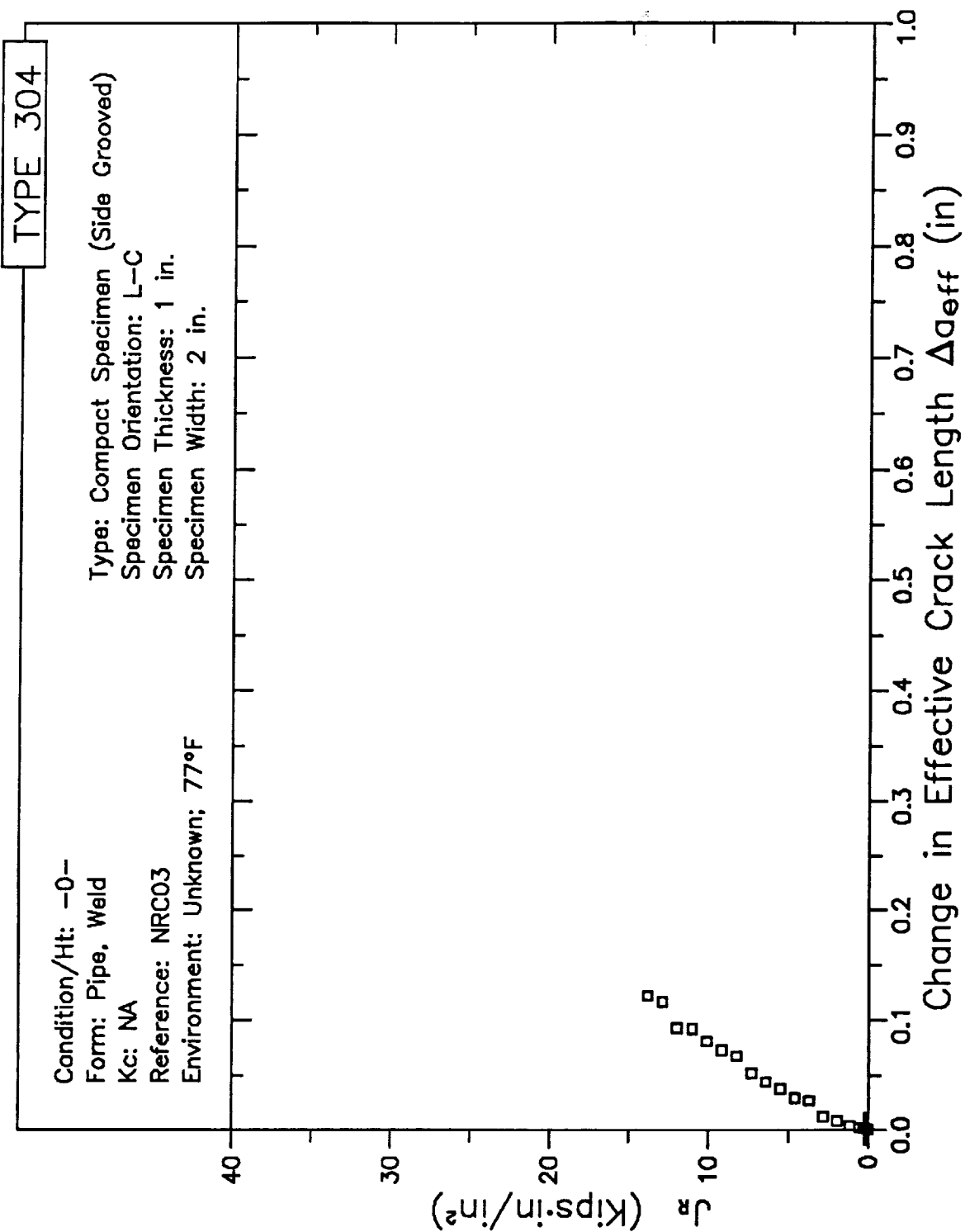
TYPE 304

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: NRC03  
Environment: Unknown; 77°F

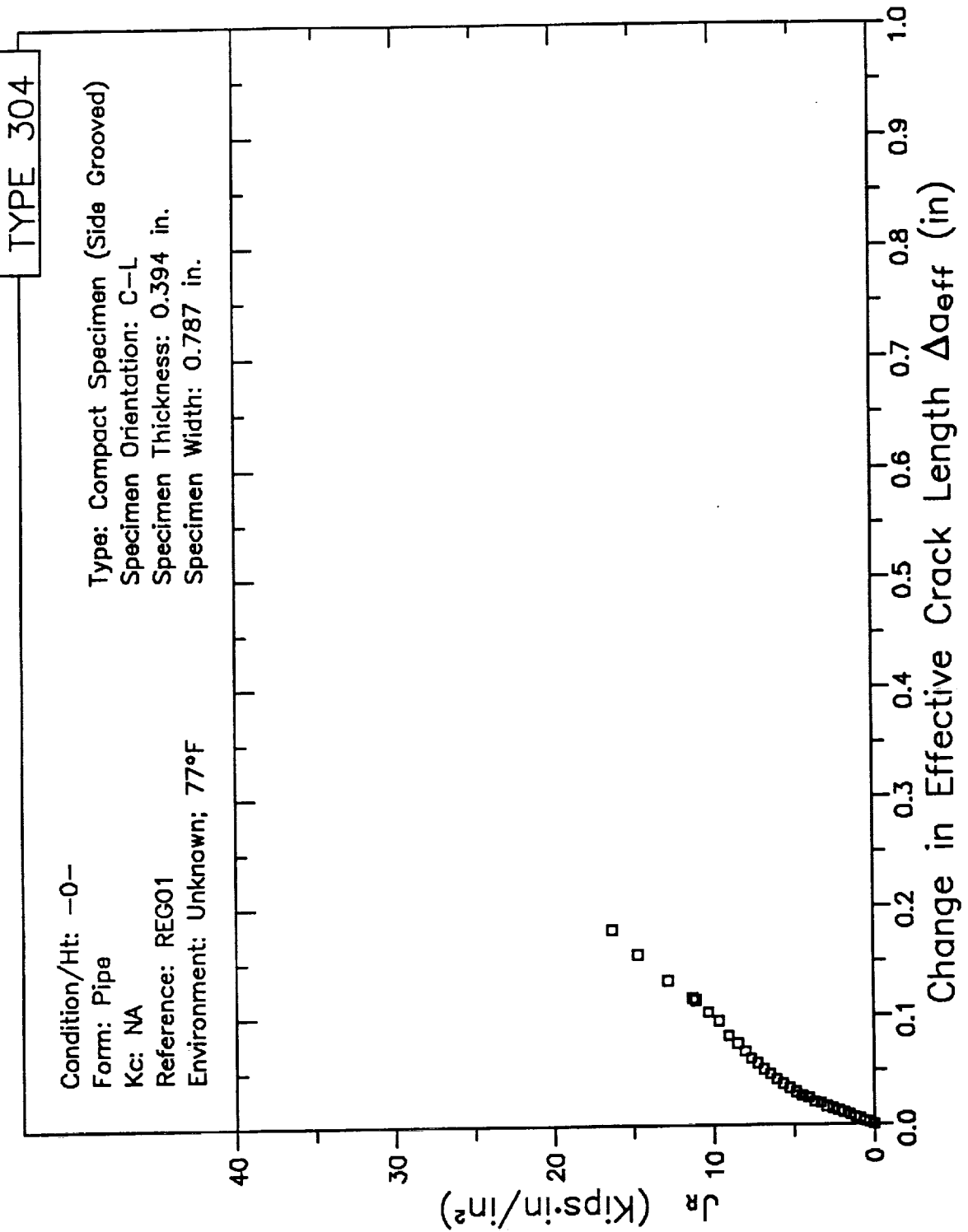
Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 1 in.  
Specimen Width: 2 in.



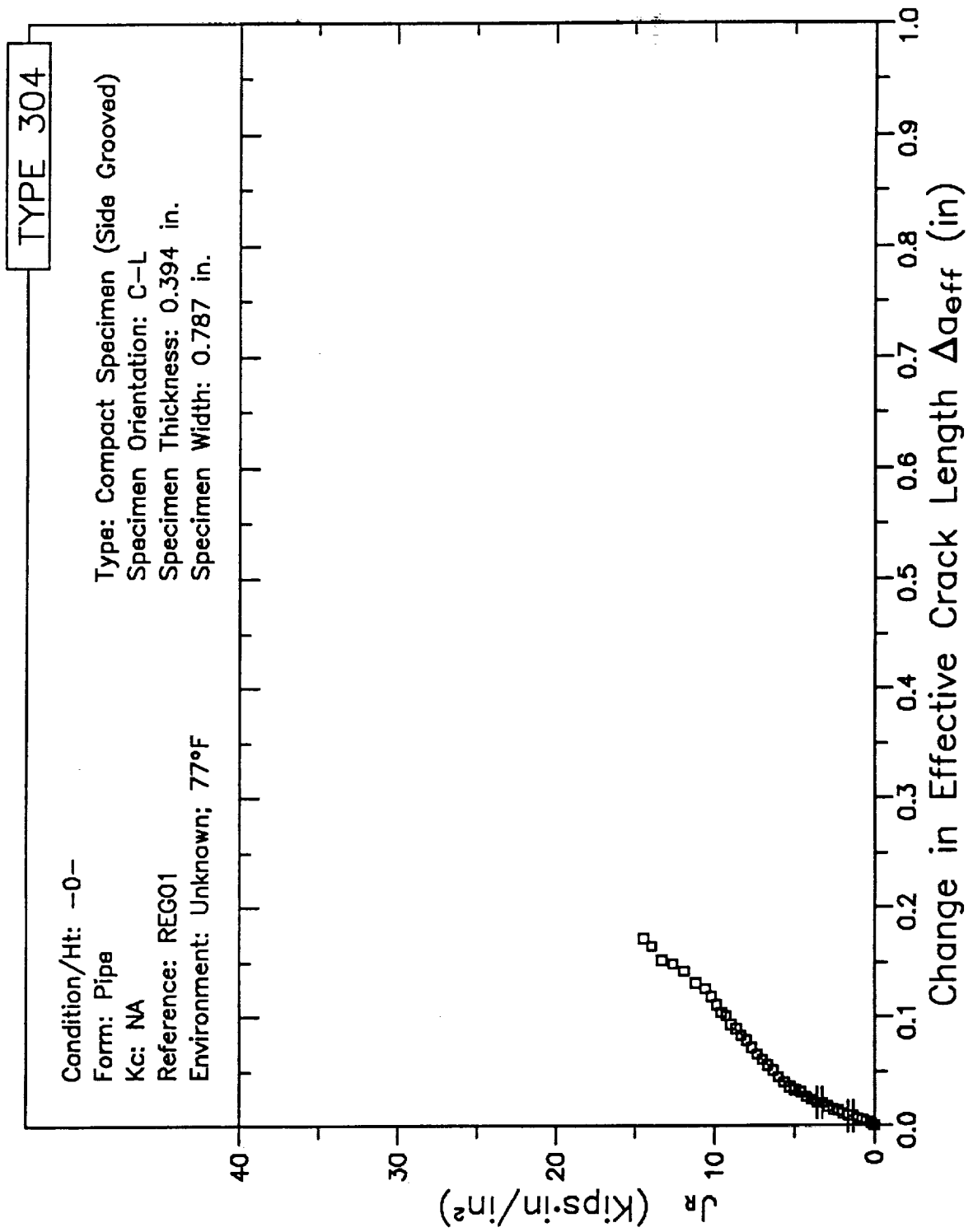
# RESISTANCE CURVE



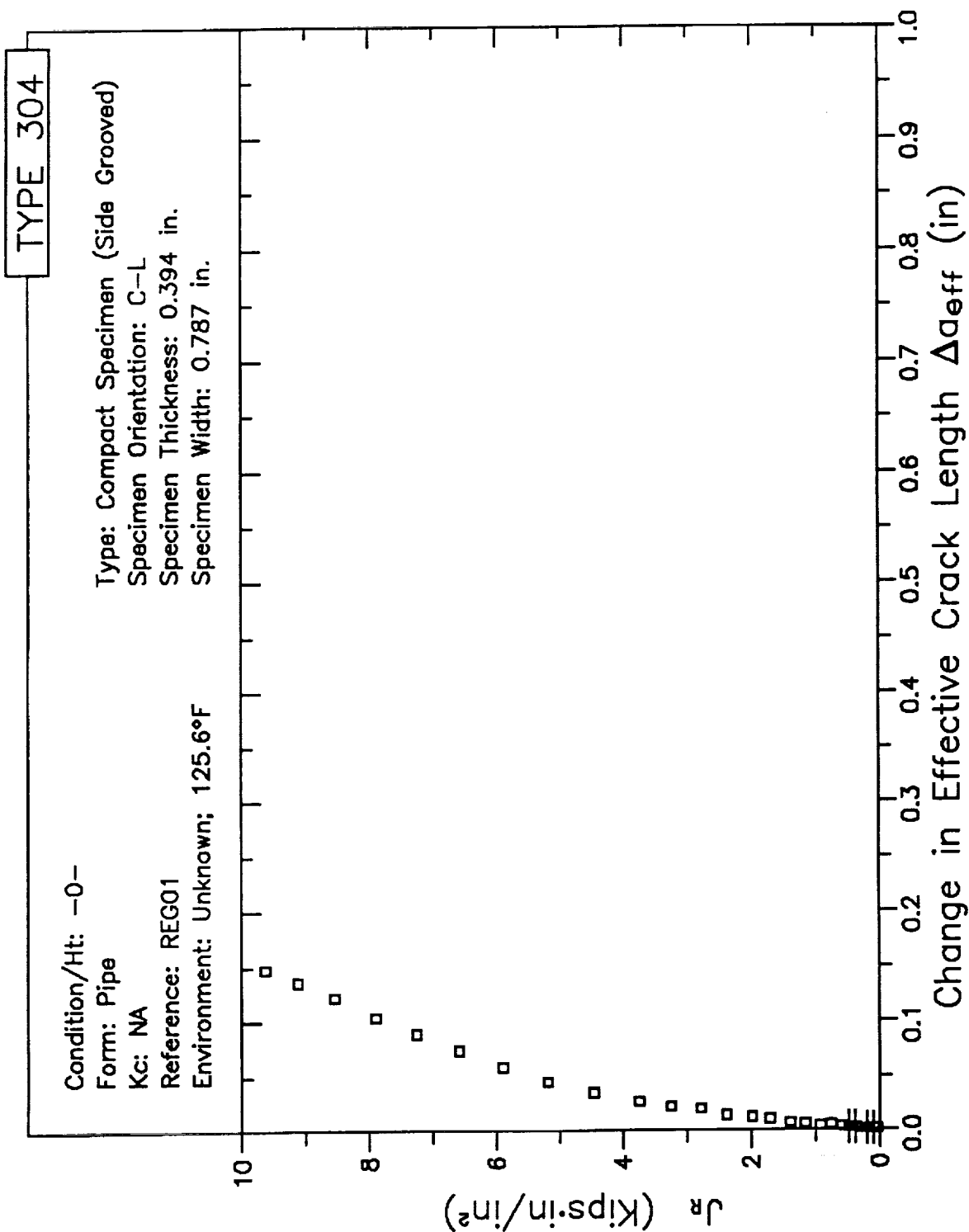
# RESISTANCE CURVE



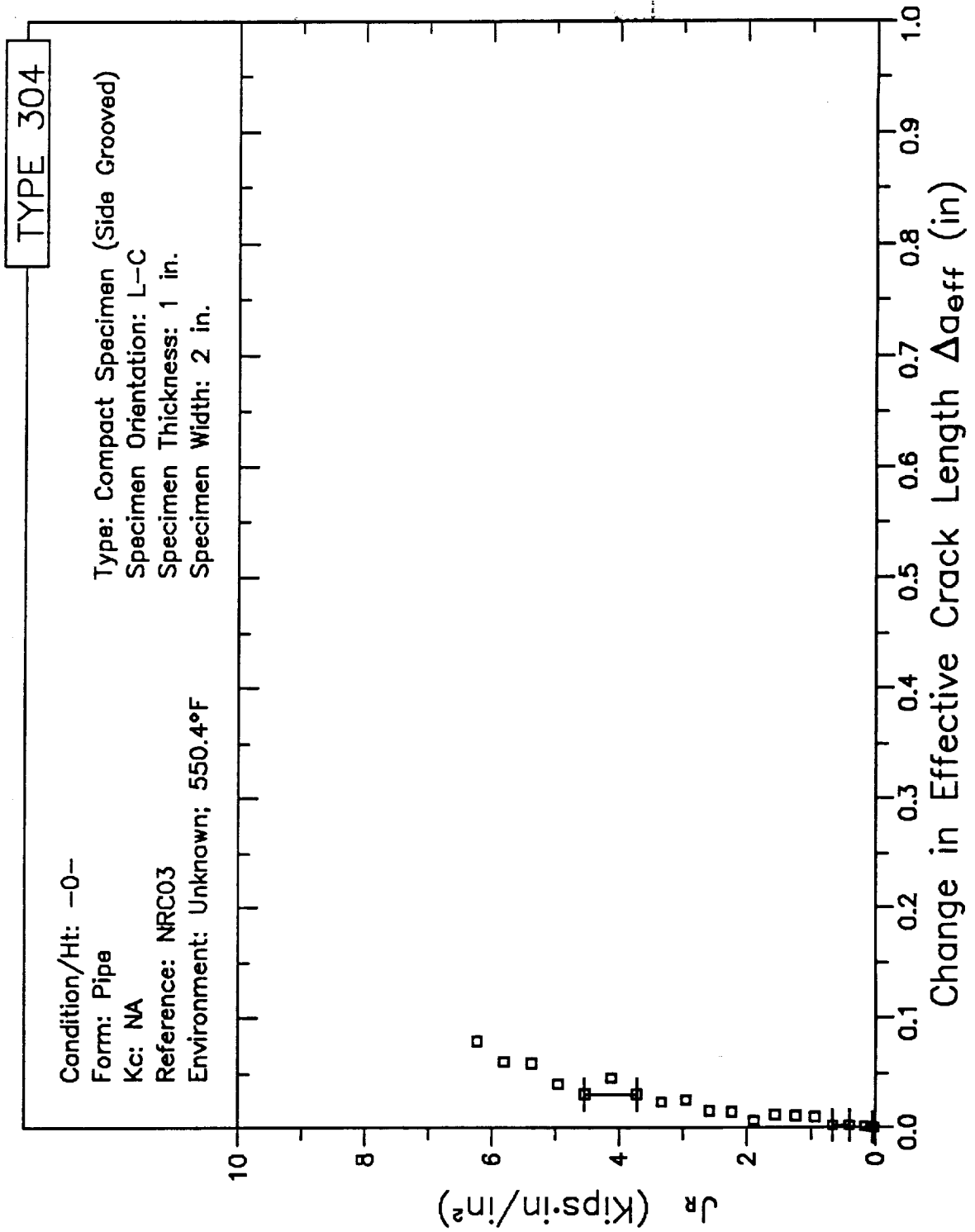
# RESISTANCE CURVE



# RESISTANCE CURVE



# RESISTANCE CURVE

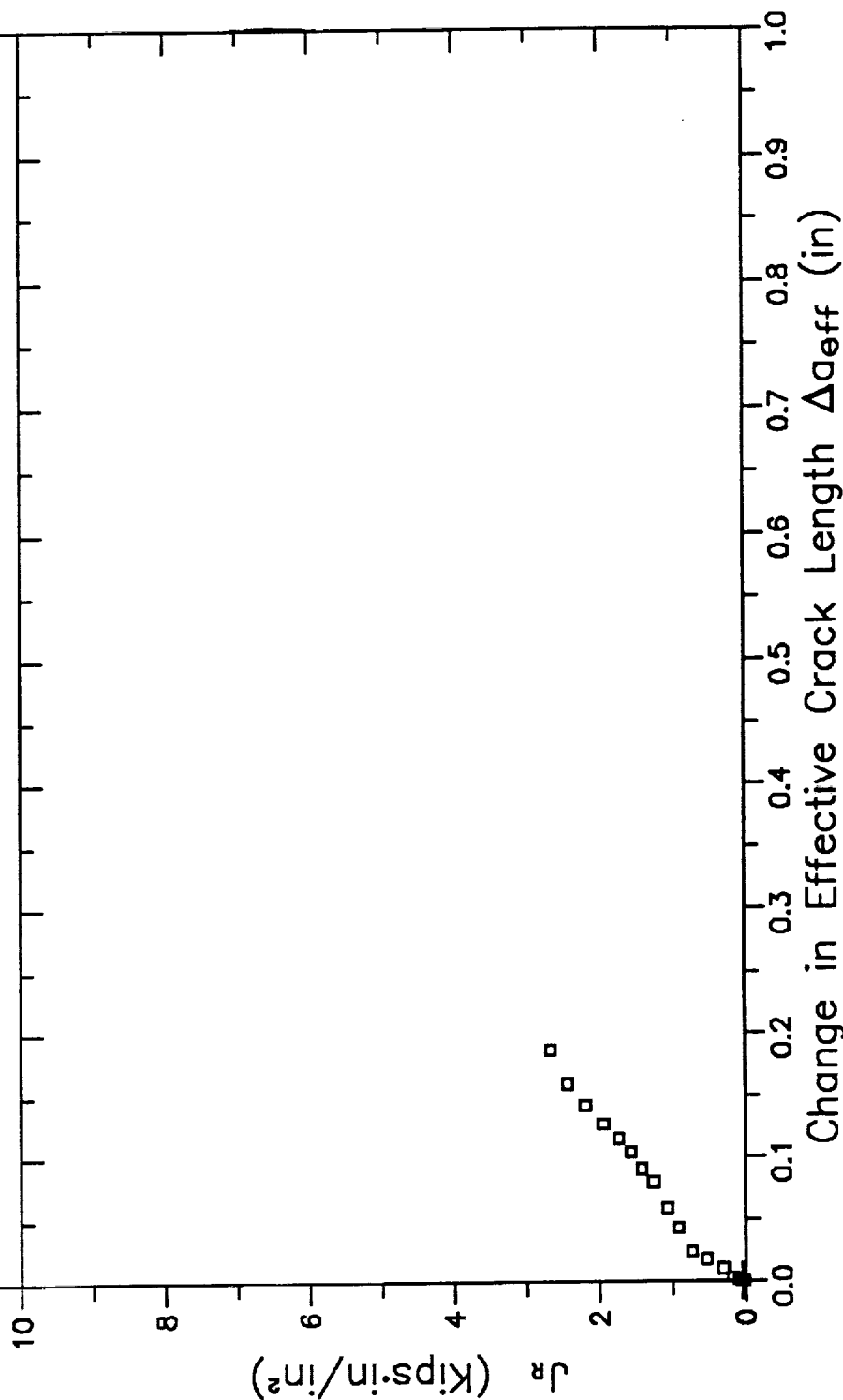


# RESISTANCE CURVE

TYPE 304

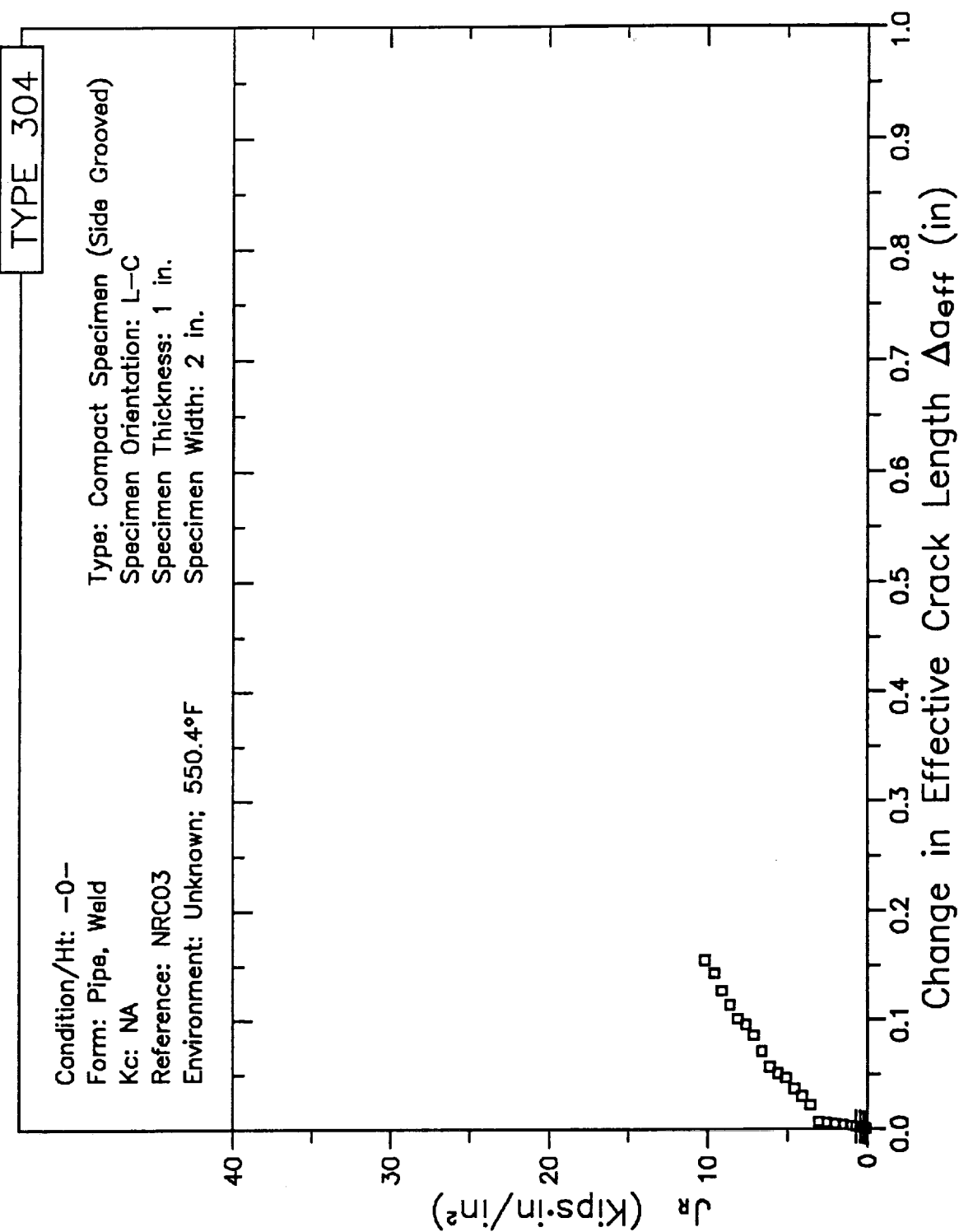
Condition/Ht: -0-  
Form: Pipe, Weld  
Kc: NA  
Reference: NRC03  
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 1 in.  
Specimen Width: 2 in.





# RESISTANCE CURVE



# RESISTANCE CURVE

TYPE 304

Condition/Ht: -0-

Form: Plate (1 in. thick)

Kc: NA

Reference: REG03

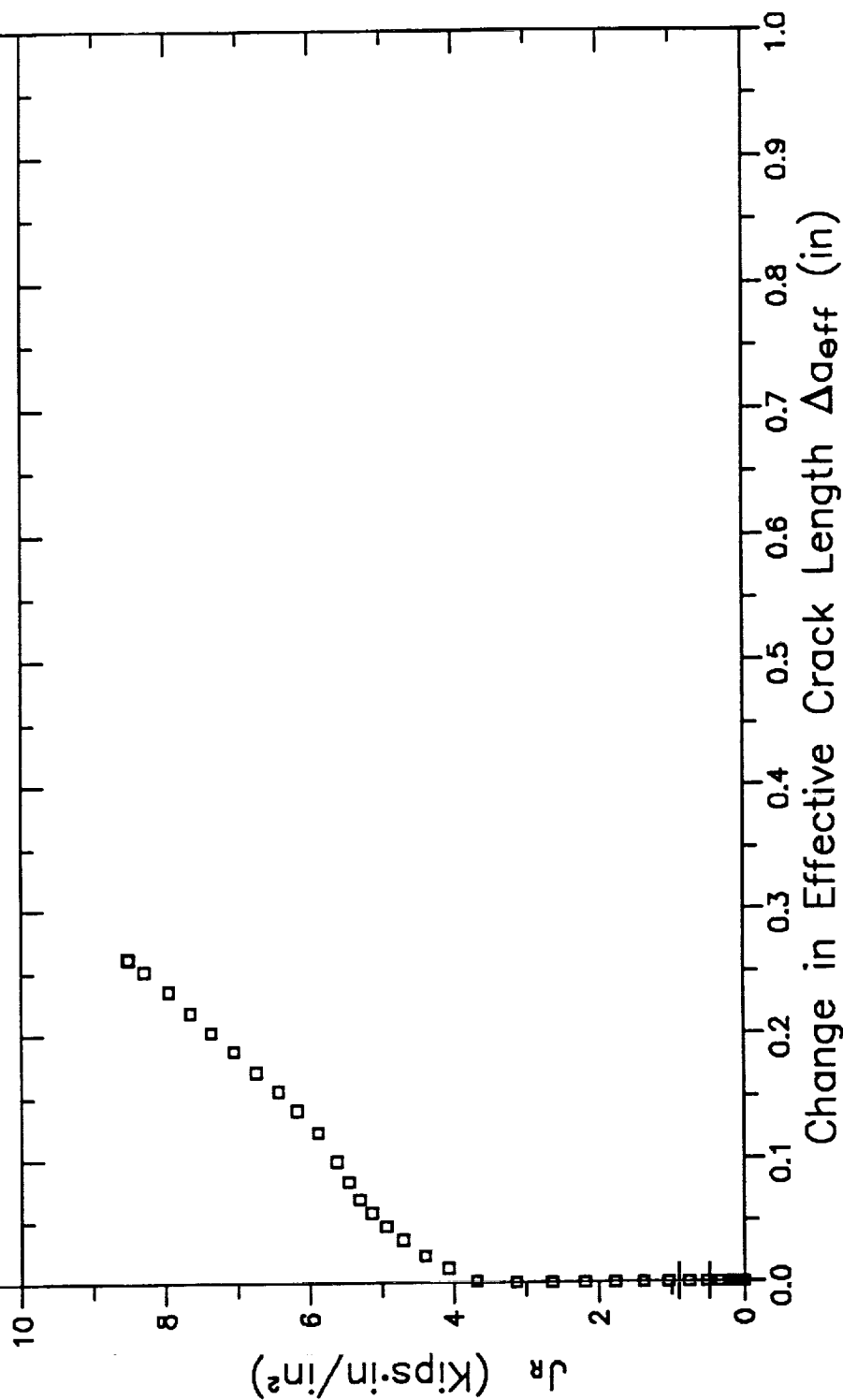
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)

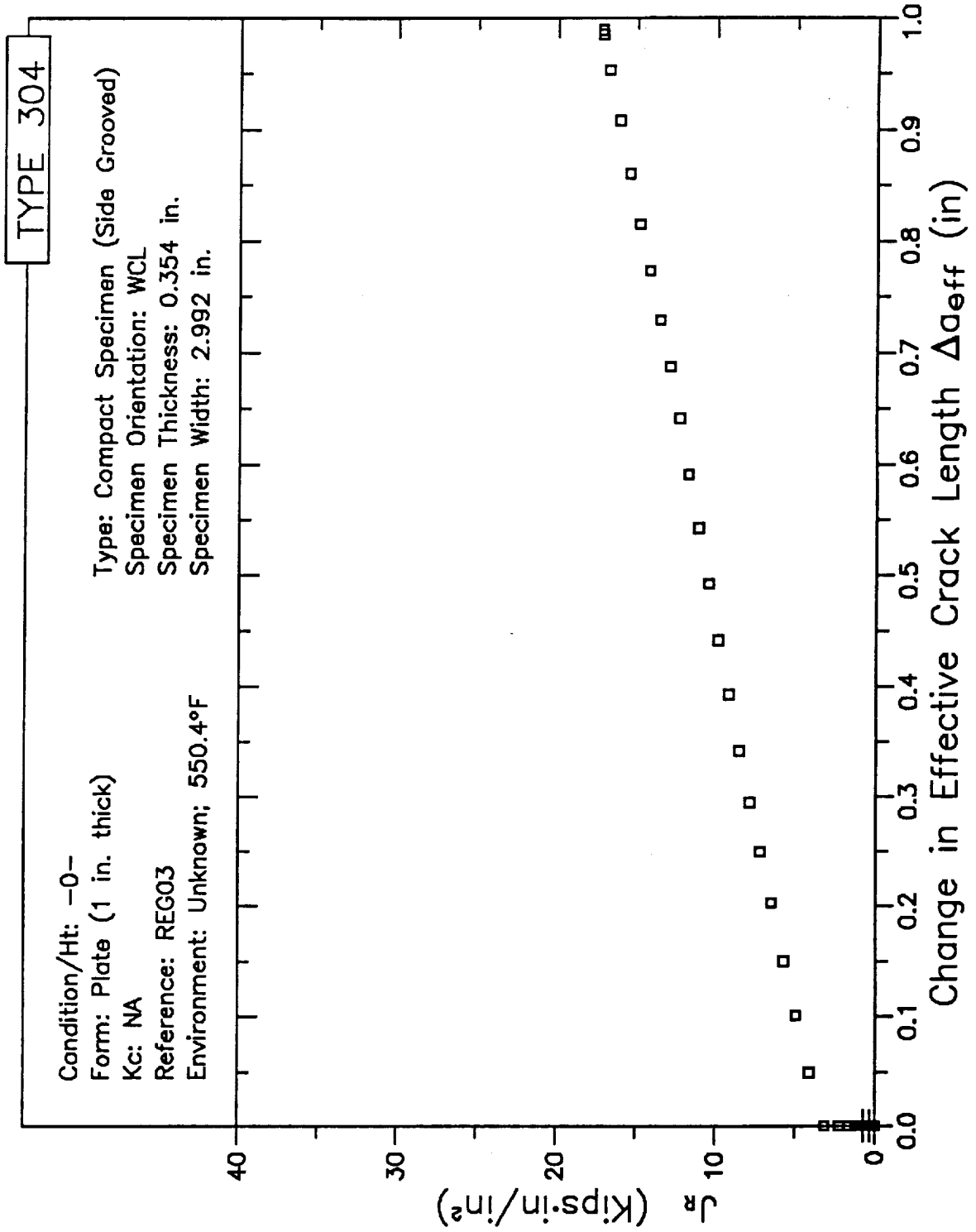
Specimen Orientation: WCL

Specimen Thickness: 0.315 in.

Specimen Width: 0.984 in.



# RESISTANCE CURVE

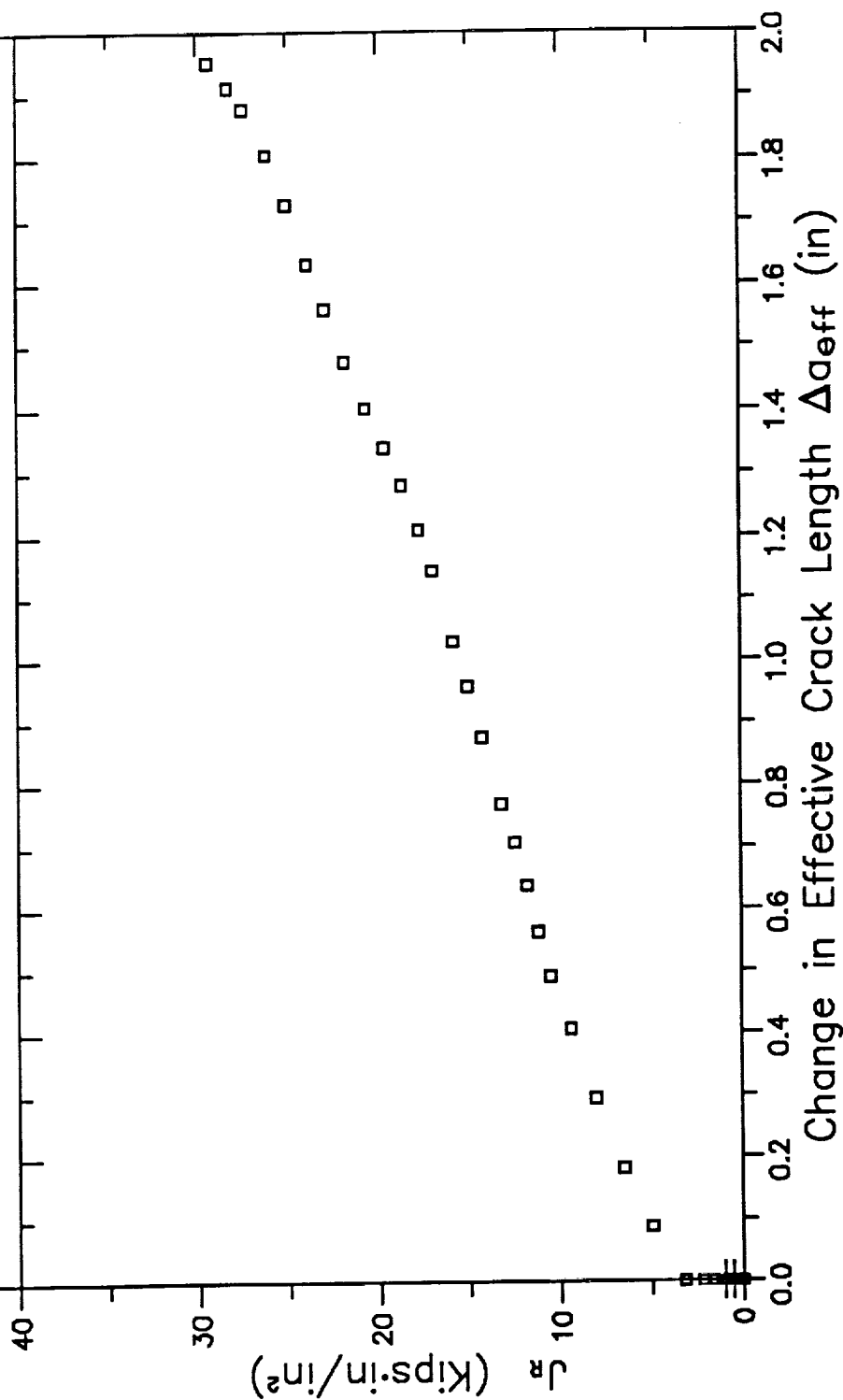


# RESISTANCE CURVE

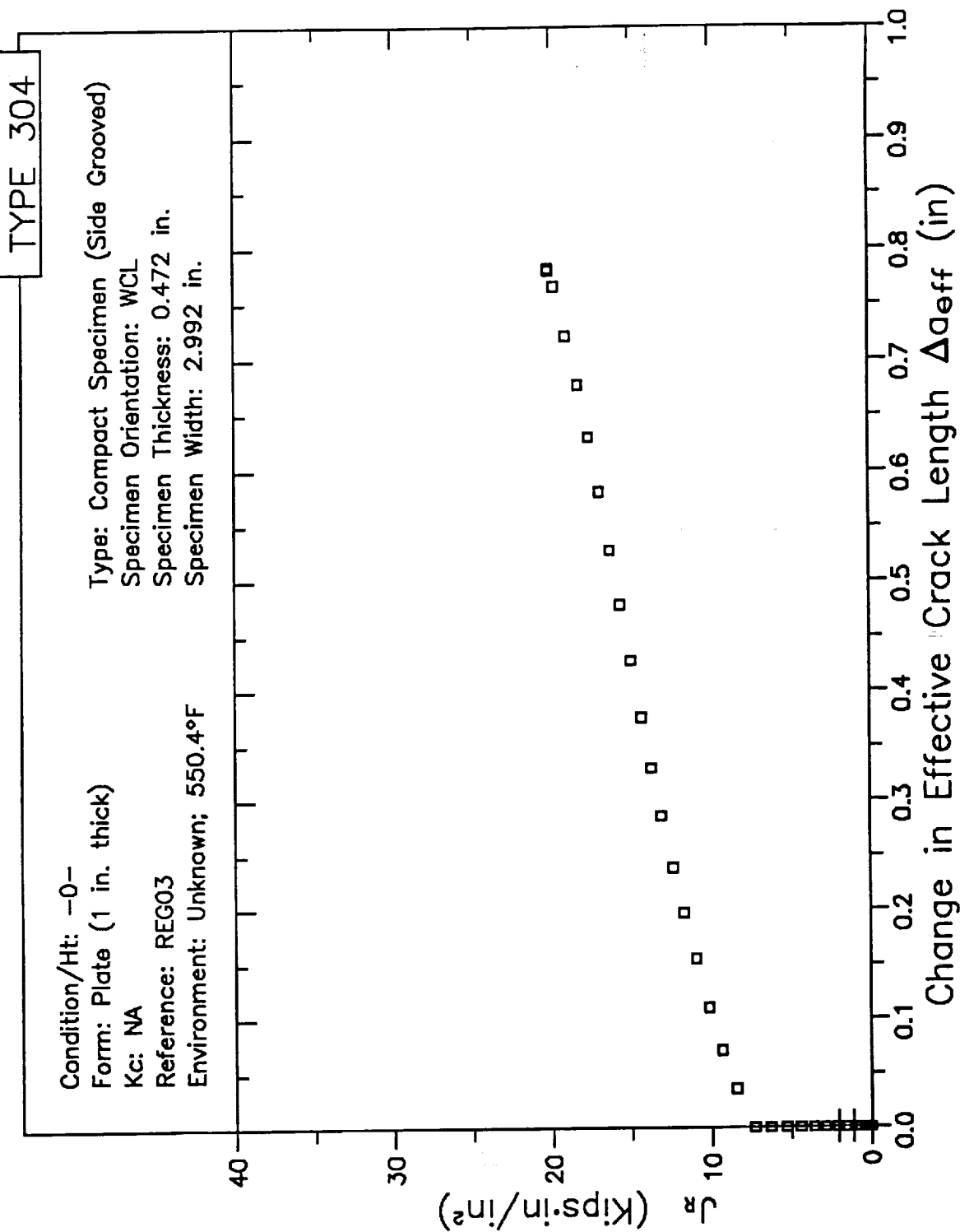
TYPE 304

Condition/Ht: -0-  
Form: Plate (1 in. thick)  
Kc: NA  
Reference: REG03  
Environment: Unknown; 550.4°F

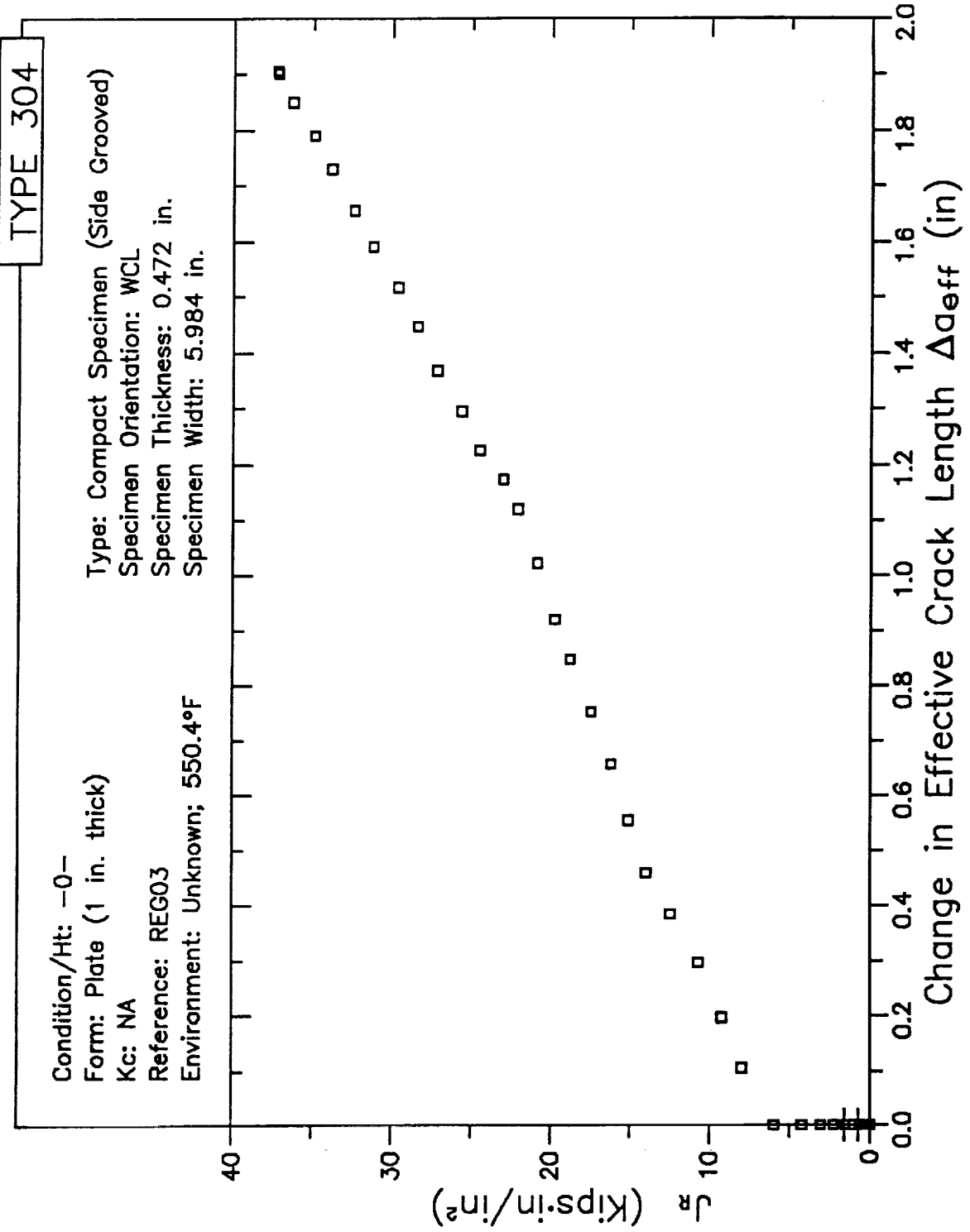
Type: Compact Specimen (Side Grooved)  
Specimen Orientation: WCL  
Specimen Thickness: 0.354 in.  
Specimen Width: 5.984 in.



# RESISTANCE CURVE



# RESISTANCE CURVE



**Appendix B**  
**Graphical Presentation of FCG Rate and R-Curve Data for Alloy Steel**

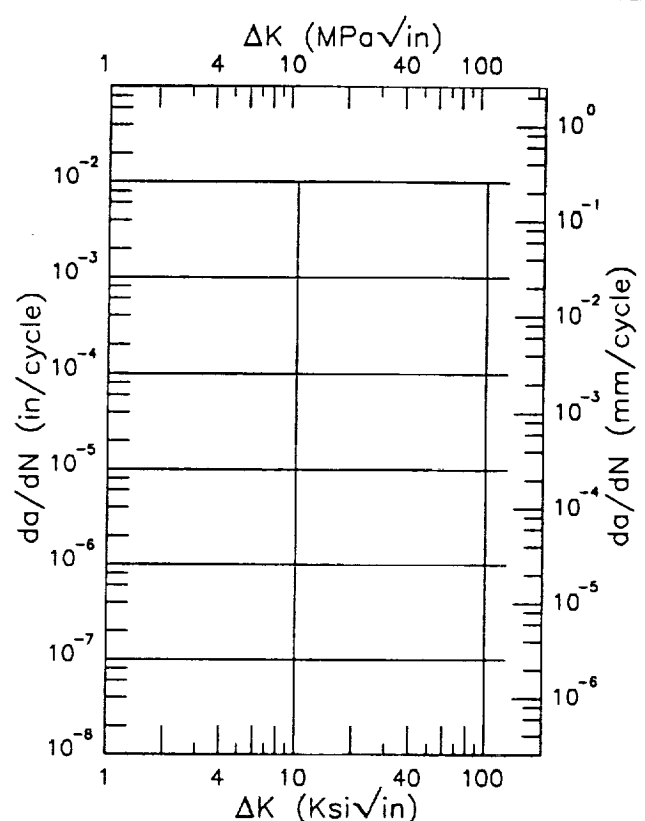
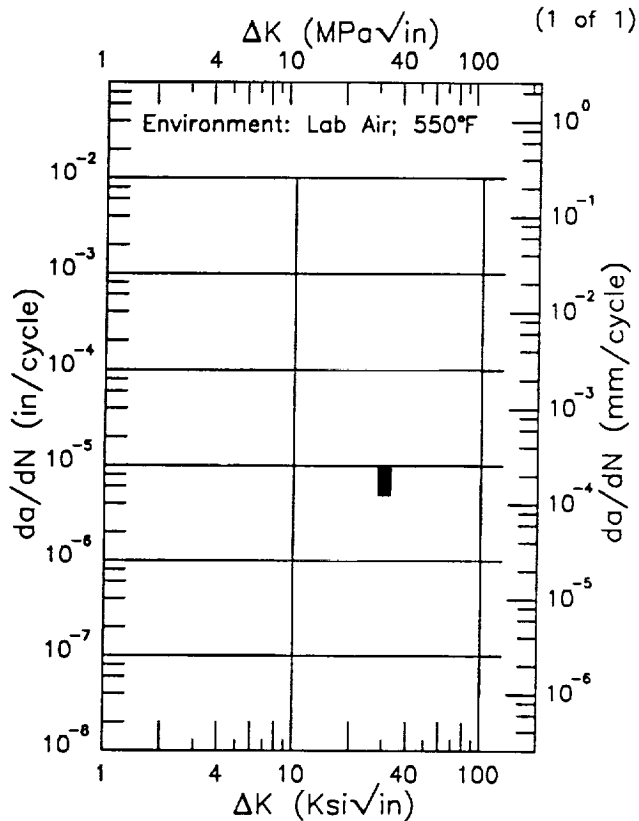




E | A508 |

Condition/Ht: -99  
 Form: Forging  
 Specimen Type: CT  
 Orientation: T-L  
 Stress Ratio: 0.1  
 Frequency: 0.1 Hz

Yield Strength: 64. ksi  
 Ult. Strength: 88.8 ksi  
 Specimen Thk: 2 in.  
 Specimen Width: 4 in.  
 Ref: EPBAB



$\Delta K$  (Ksi√in)       $da/dN$  ( $10^{-6}$  in/cycle)  
 30.03 (min)                      8.04  
 30.42 (max)                      7.18

$\Delta K$  (Ksi√in)       $da/dN$  ( $10^{-6}$  in/cycle)

RMS %  
 Error  
 12.60

Life Prediction Ratio Summary  
 0.    .5    .8    1.25    2. ---

RMS %  
 Error

Life Prediction Ratio Summary  
 0.    .5    .8    1.25    2. ---

B1-2

R

2.25CR-1MO

Condition/Ht: -99

Form: Casting

Specimen Type: CT

Orientation:

Frequency: 1 Hz

Environment: LAB AIR;1000°F

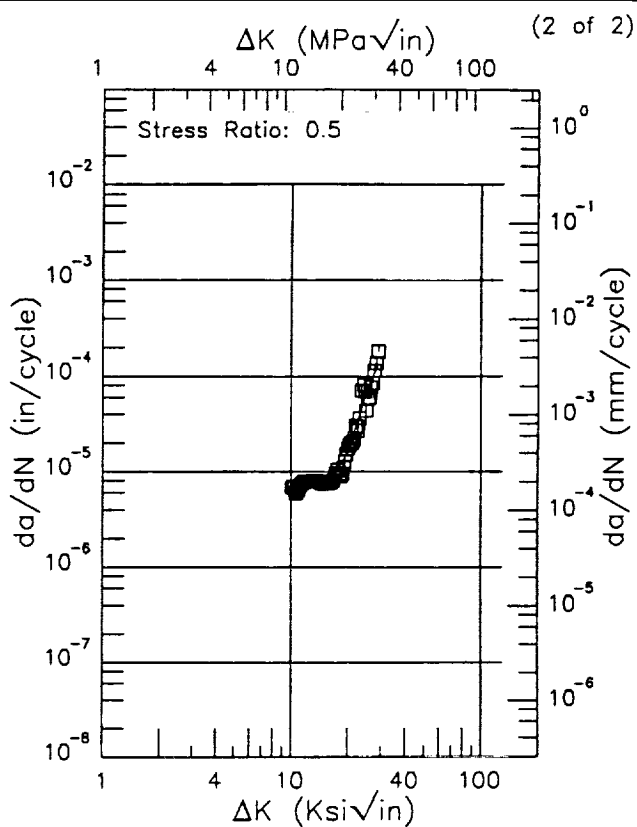
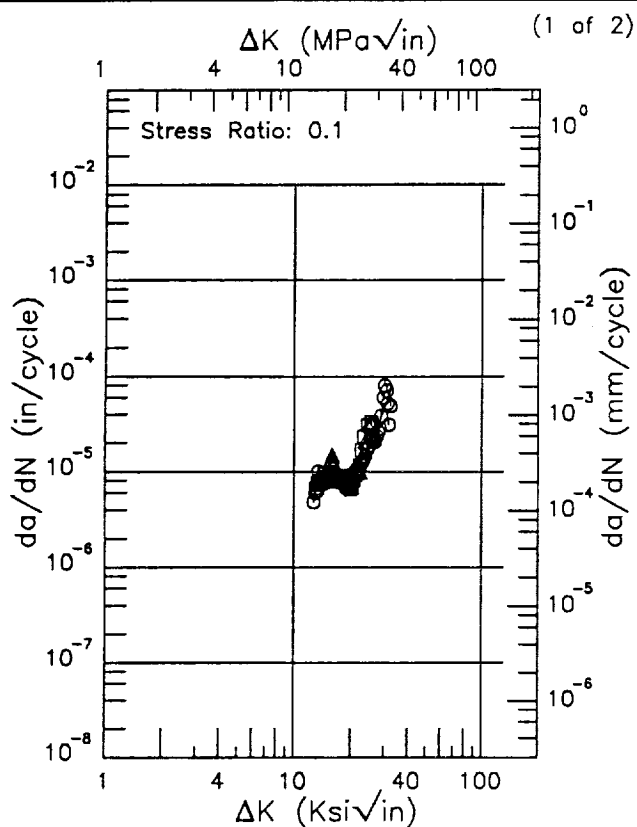
Yield Strength: 40 ksi

Ult. Strength:

Specimen Thk: 1.004 - 1.005 in.

Specimen Width: 2.006 in.

Ref: DT004

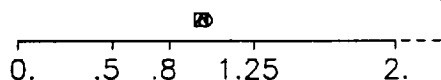


$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
12.66 (min)	7.74
13.	7.69
16.	7.74
20.	9.73
25.	18.1
30.	45.0
32.36 (max)	74.8

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
10.02 (min)	6.08
13.	7.57
16.	8.02
20.	15.8
25.	67.0
28.83 (max)	135.

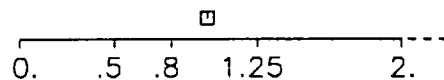
RMS %  
Error  
24.44

Life Prediction Ratio Summary



RMS %  
Error  
14.96

Life Prediction Ratio Summary

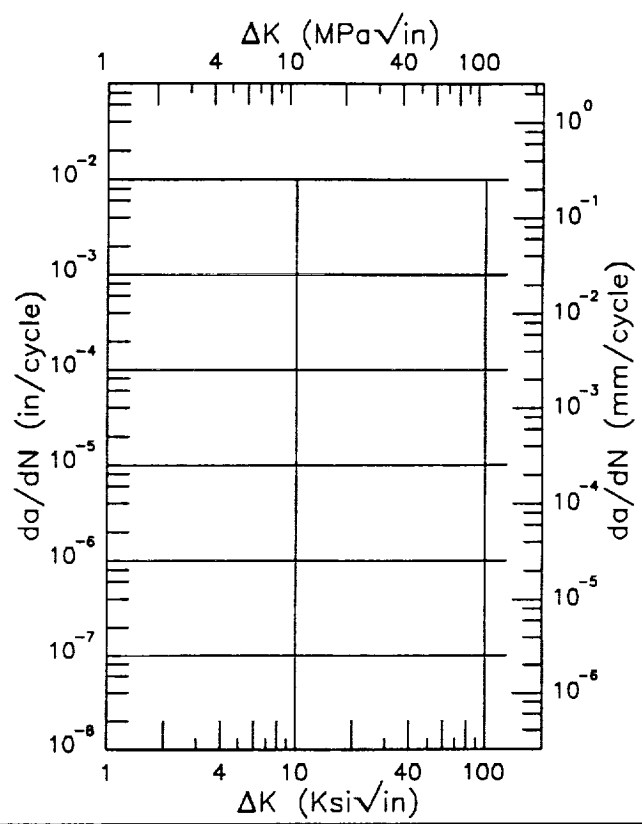
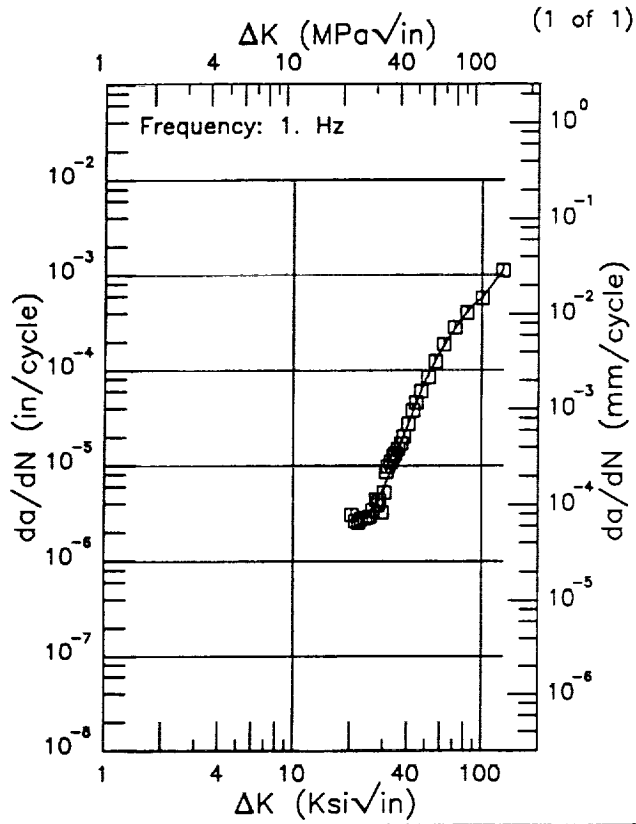


B1-3

PAGE B1-2 INTENTIONALLY BLANK  
PREVIOUS PAGE BLANK NOT FILMED

Condition/Ht: -99  
 Form: Casting  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.1  
 Environment: LAB AIR; RT

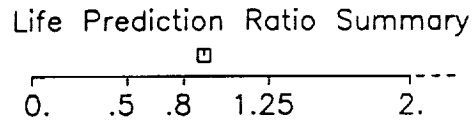
Yield Strength: 41 ksi  
 Ult. Strength:  
 Specimen Thk: 1.004 in.  
 Specimen Width: 2.006 in.  
 Ref: DT004



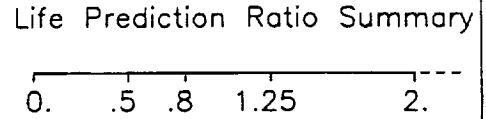
$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
20.32 (min)	2.70
25.	3.06
30.	5.78
35.	12.4
40.	25.6
50.	78.4
60.	158.
70.	258.
80.	376.
90.	496.
100.	576.
128.25 (max)	1096.

$\Delta K$  (Ksi $\sqrt{\text{in}}$ )       $da/dN$  ( $10^{-6}$  in/cycle)

RMS %  
 Error  
 12.52



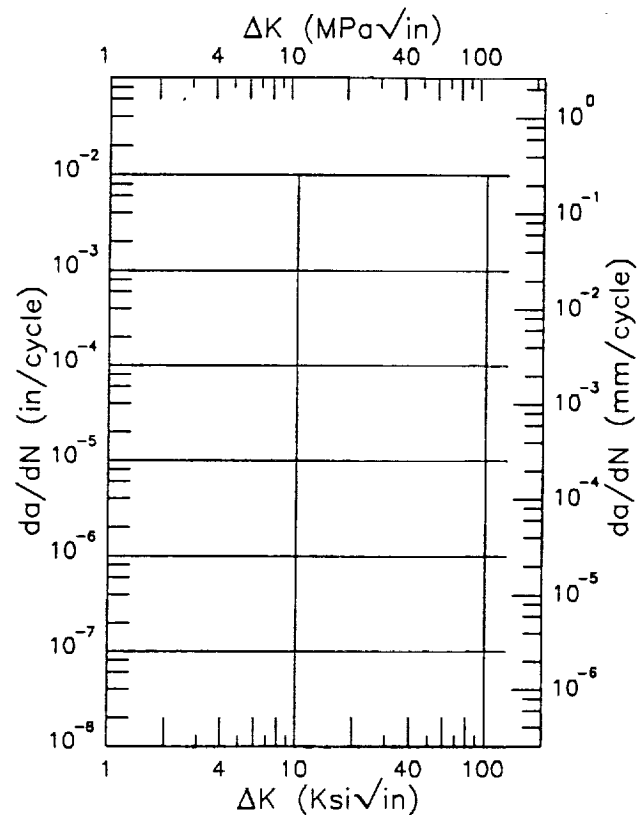
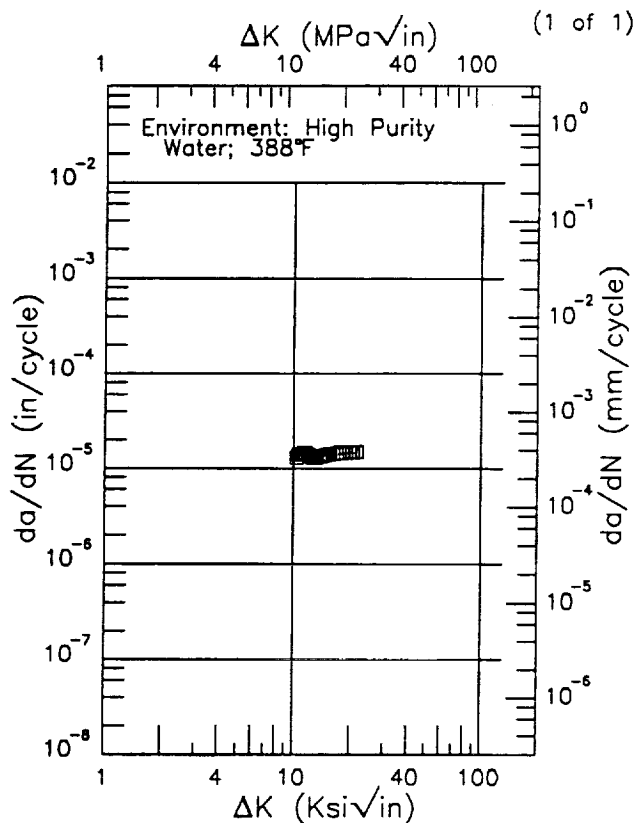
RMS %  
 Error



E 22 NI MO CR 37

Condition/Ht: -99  
Form: Plate  
Specimen Type: CT  
Orientation: L-S  
Stress Ratio: 0.5  
Frequency: 0. Hz

Yield Strength: 83.1 ksi  
Ult. Strength: 92. ksi  
Specimen Thk: 1.969 in.  
Specimen Width: 3.898 in.  
Ref: EPKWU



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
10.35 (min)	14.1
13.	13.4
16.	13.9
20.	14.8
21.46 (max)	14.5

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
--------------------------------------	-------------------------------

RMS %  
Error  
3.08

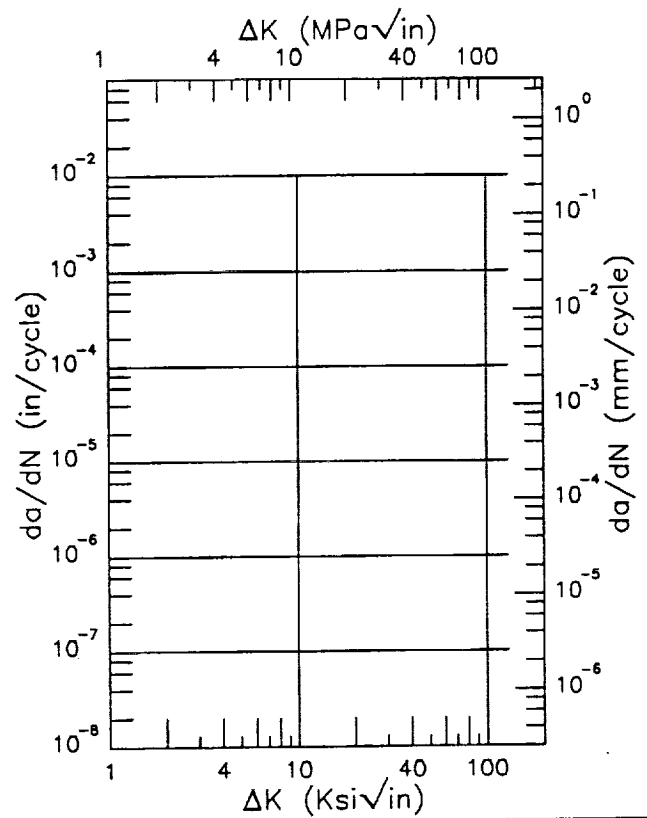
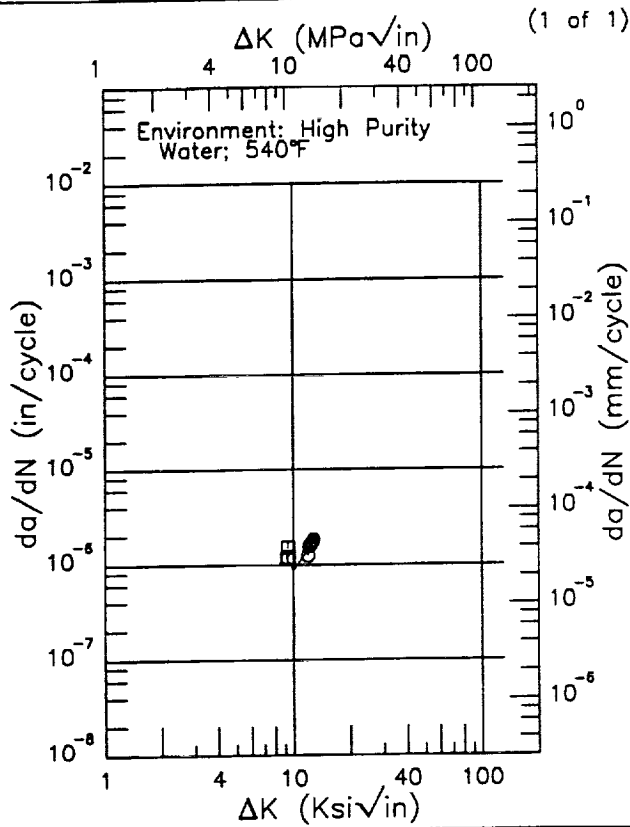
Life Prediction Ratio Summary  
0. .5 .8 1.25 2. ---

RMS %  
Error

Life Prediction Ratio Summary  
0. .5 .8 1.25 2. ---

Condition/Ht: -99  
Form: Plate  
Specimen Type: CT  
Orientation: L-S  
Stress Ratio: 0.7  
Frequency: 0. Hz

Yield Strength: 83.1 ksi  
Ult. Strength: 92. ksi  
Specimen Thk: 1.969 in.  
Specimen Width: 3.933 in.  
Ref: EPKWU



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
9.19 (min)	1.18
10.	0.868
12.73 (max)	1.72

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
9.19 (min)	1.18
10.	0.868
12.73 (max)	1.72

RMS %  
Error  
13.34

Life Prediction Ratio Summary

□ ○

0. .5 .8 1.25 2.

RMS %  
Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

E | 22 NI MO CR 37 |

Condition/Ht: -99

Form:

Specimen Type: CT

Orientation: L-S

Stress Ratio: 0.5

Frequency: 0. Hz

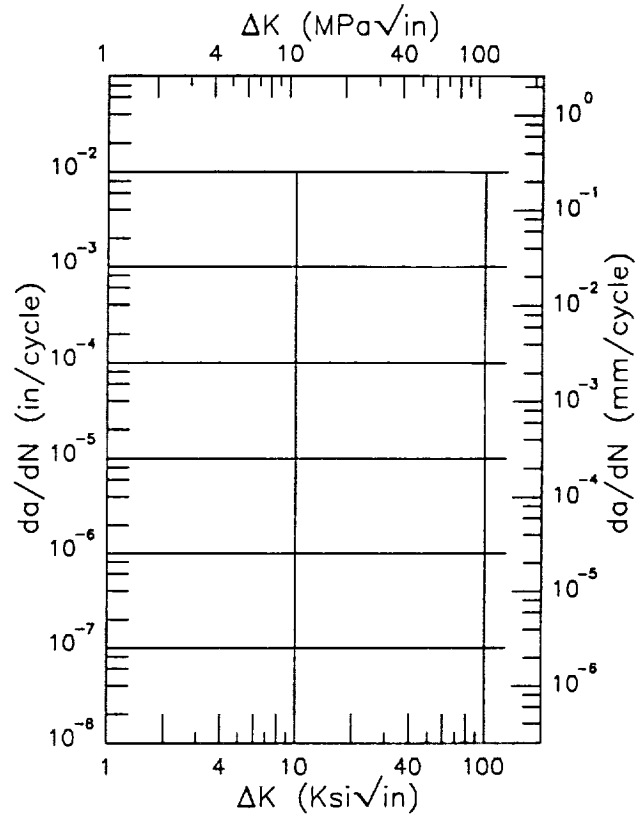
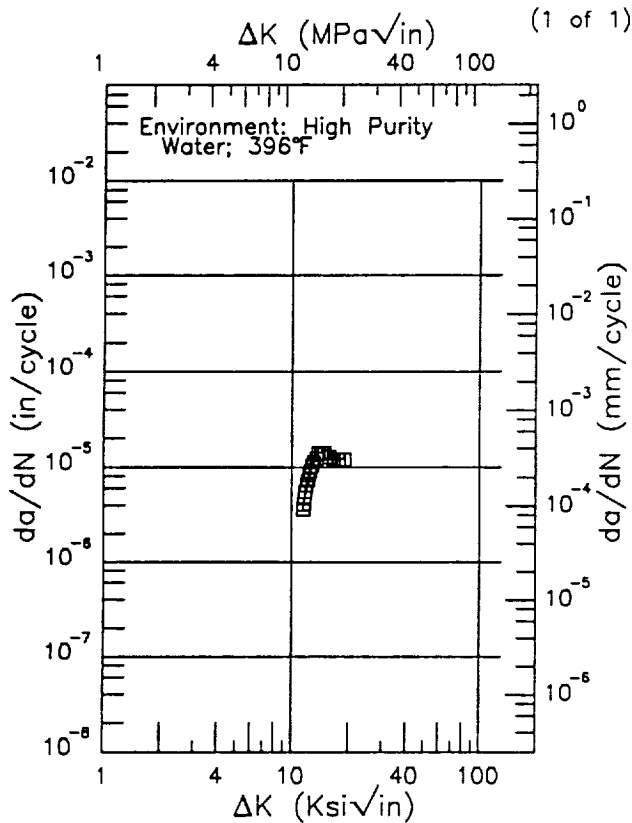
Yield Strength: 70.8 ksi

Ult. Strength: 90.8 ksi

Specimen Thk: 1.969 in.

Specimen Width: 3.937 in.

Ref: EPKWU

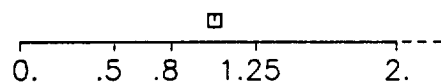


$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
11.44 (min)	3.96
13.	11.4
16.	12.5
18.82 (max)	12.1

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
---------------------	-------------------------------

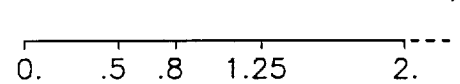
RMS %  
Error  
11.63

Life Prediction Ratio Summary



RMS %  
Error

Life Prediction Ratio Summary



B1-8



R 22 NI MO CR 37

Condition/Ht: -99

Form:

Specimen Type: CT

Orientation: S-L

Frequency: 0. Hz

Environment: HIGH PURITY H2O;532°F

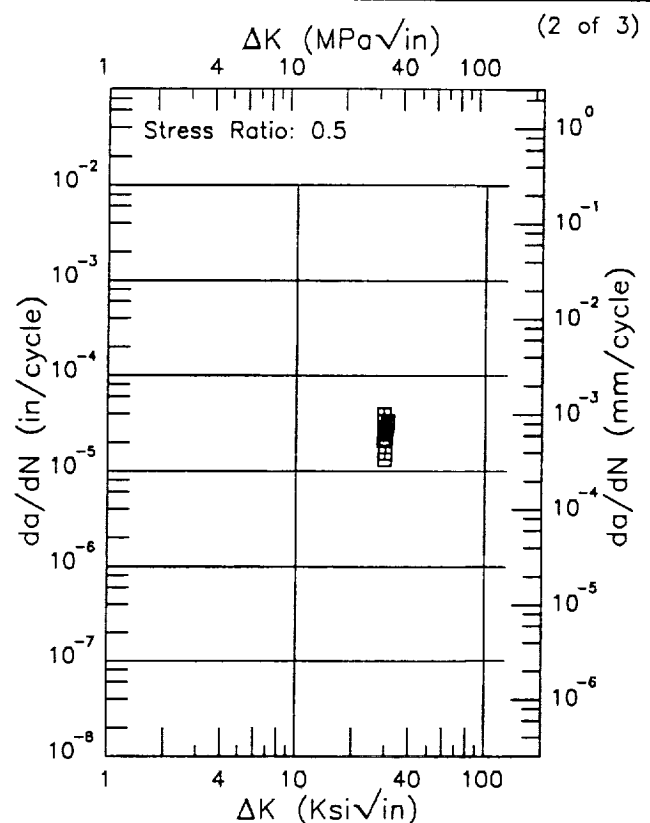
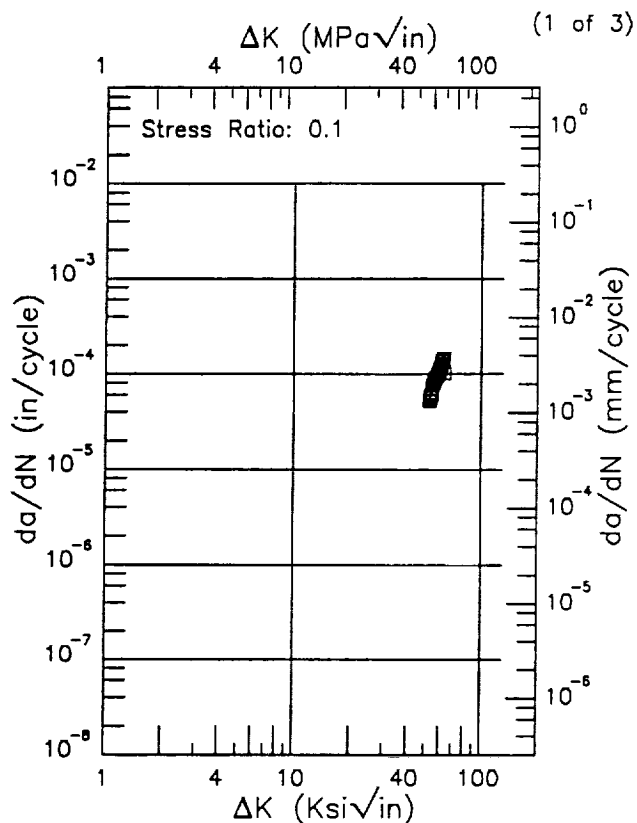
Yield Strength: 61.8 ksi

Ult. Strength: 86.6 ksi

Specimen Thk: 3.937 in.

Specimen Width: 4.429 in.

Ref: EPKWU



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
52.54 (min)	51.9
60.	114.
63.06 (max)	137.

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
29.09 (min)	34.8
30.	22.6
30.73 (max)	35.2

RMS %  
Error

8.69

Life Prediction Ratio Summary

□

0. .5 .8 1.25 2.---

RMS %  
Error

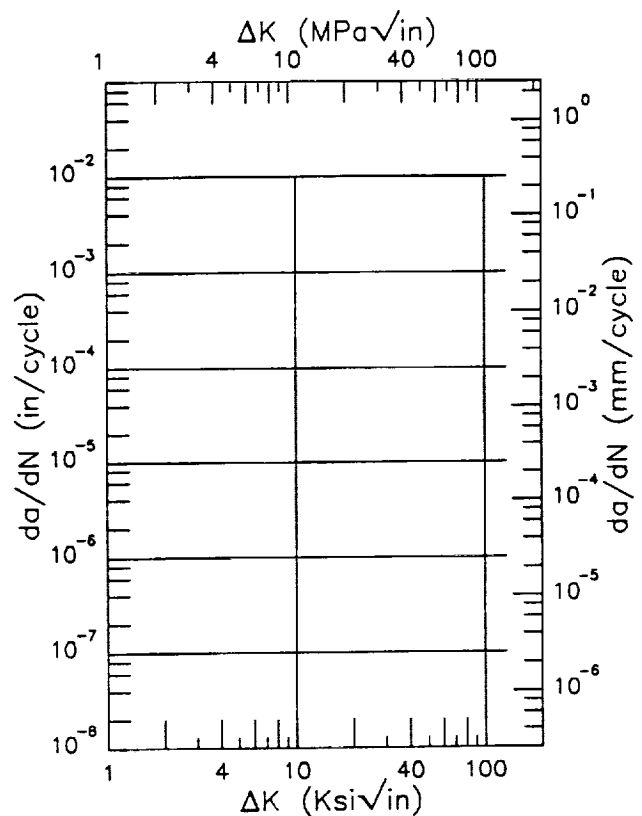
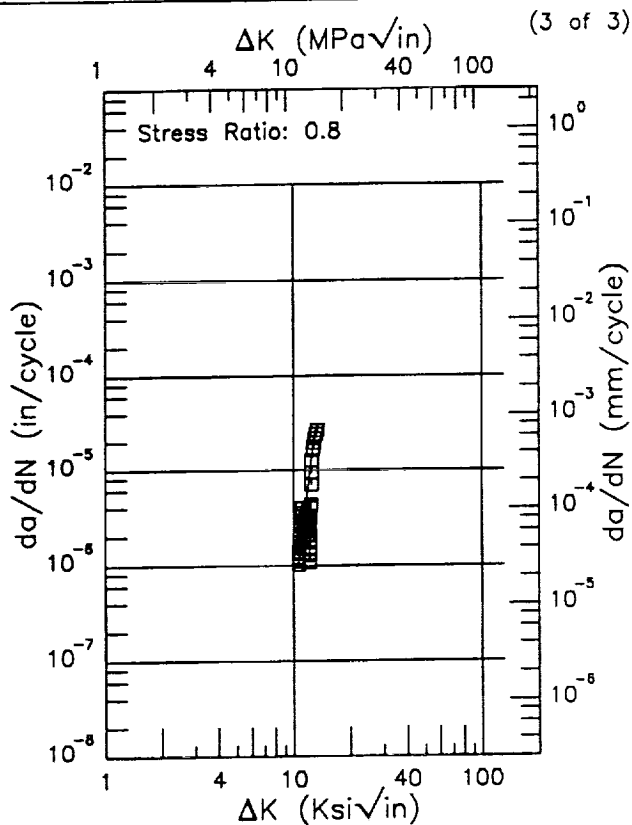
24.60

Life Prediction Ratio Summary

0. .5 .8 1.25 2.---

Condition/Ht: -99  
 Form:  
 Specimen Type: CT  
 Orientation: S-L  
 Frequency: 0. Hz  
 Environment: HIGH PURITY H2O;532°F

Yield Strength: 61.8 ksi  
 Ult. Strength: 86.6 ksi  
 Specimen Thk: 3.937 in.  
 Specimen Width: 4.429 in.  
 Ref: EPKWU



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
10.55 (min)	0.986
13.	25.9
13.23 (max)	24.2

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
--------------------------------------	-------------------------------

RMS %  
 Error  
 53.17

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

RMS %  
 Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

R

23 NI MO CR 36

Condition/Ht: -99

Form:

Specimen Type:

Orientation:

Frequency: 0. Hz

Environment: HIGH PURITY H2O;532.°F

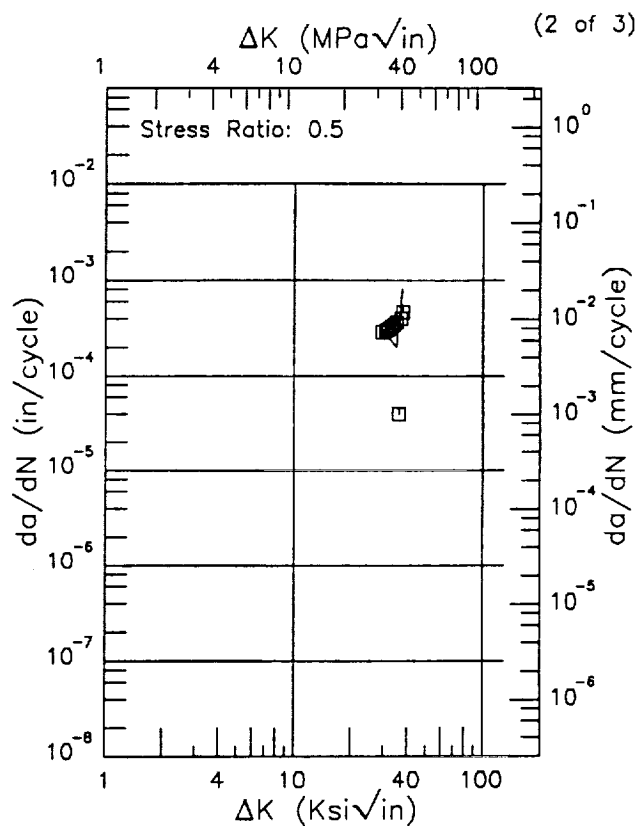
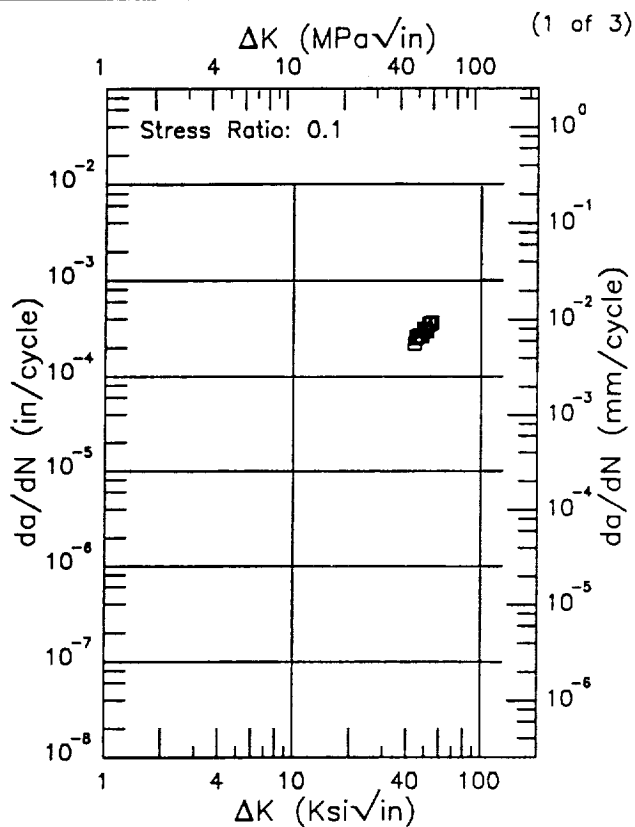
Yield Strength:

Ult. Strength:

Specimen Thk: 1.969 in.

Specimen Width: 3.937 in.

Ref: EPKWU



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
43.92 (min)	237.
50.	299.
54.19 (max)	368.

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
29.38 (min)	285.
30.	302.
35.	199.
37.46 (max)	802.

RMS %  
Error

4.54

Life Prediction Ratio Summary

0. .5 .8 1.25 2.---

RMS %  
Error

45.13

Life Prediction Ratio Summary

0. .5 .8 1.25 2.---

Condition/Ht: -99

Form:

Specimen Type:

Orientation:

Frequency: 0. Hz

Environment: HIGH PURITY H2O;532.°F

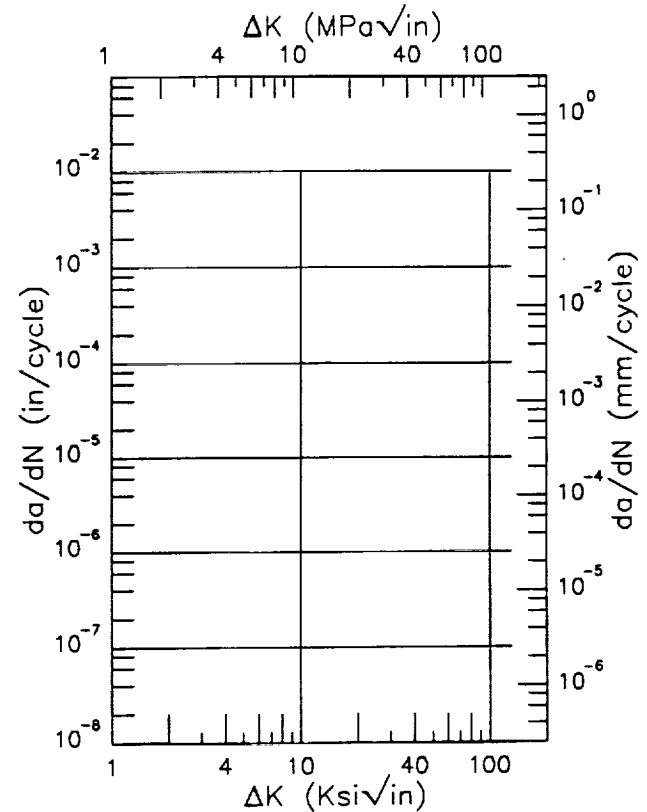
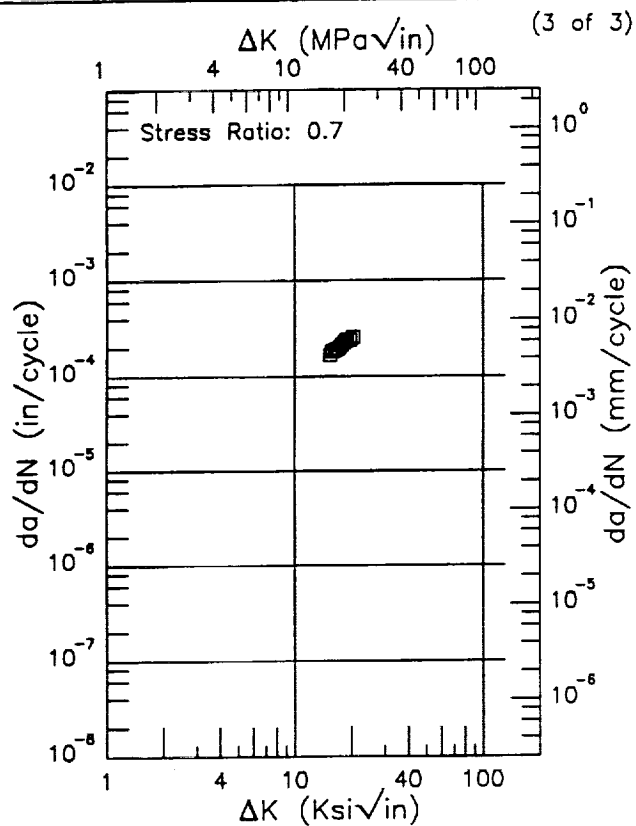
Yield Strength:

Ult. Strength:

Specimen Thk: 1.969 in.

Specimen Width: 3.937 in.

Ref: EPKWU

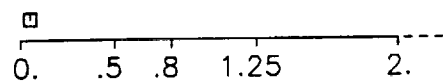


$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
15.37 (min)	172.
16.	182.
20.	250.
20.35 (max)	254.

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
--------------------------------------	-----------------------------------

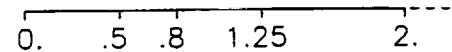
RMS %  
Error  
1.97

Life Prediction Ratio Summary



RMS %  
Error

Life Prediction Ratio Summary



F 300M

Condition/Ht: -99

Form: Bar

Specimen Type: CT

Orientation: L-T

Stress Ratio: 0.05

Environment: 3.5% NaCl; RT

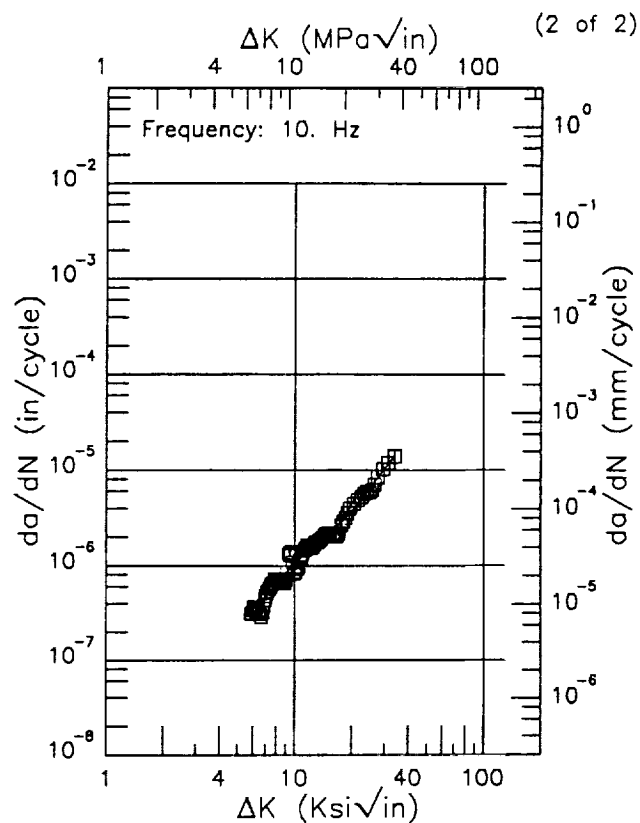
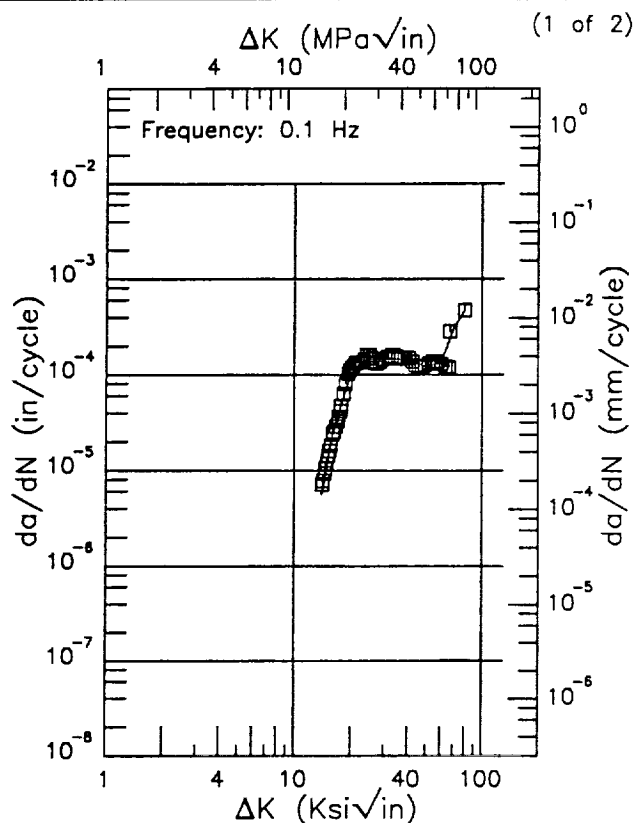
Yield Strength: 245 ksi

Ult. Strength:

Specimen Thk: 0.25 in.

Specimen Width: 2.999 in.

Ref: F22



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
14.03 (min)	5.60
16.	25.2
20.	101.
25.	151.
30.	150.
35.	146.
40.	142.
50.	123.
60.	135.
70.	301.
80.	469.
80.08 (max)	468.

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
5.85 (min)	0.275
6.	0.298
7.	0.465
8.	0.654
9.	0.854
10.	1.06
13.	1.69
16.	2.35
20.	3.65
25.	6.55
30.	10.4
33.75 (max)	13.7

RMS %  
Error  
13.99

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

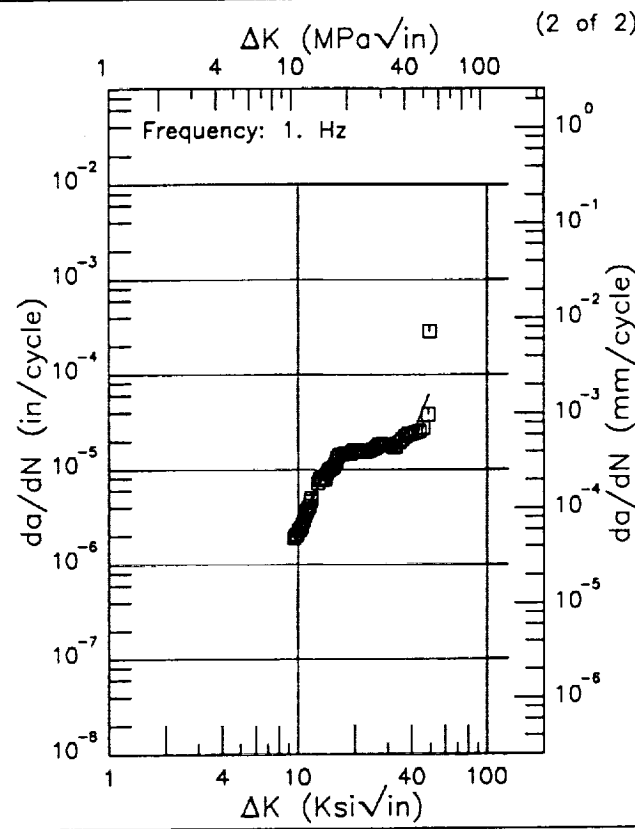
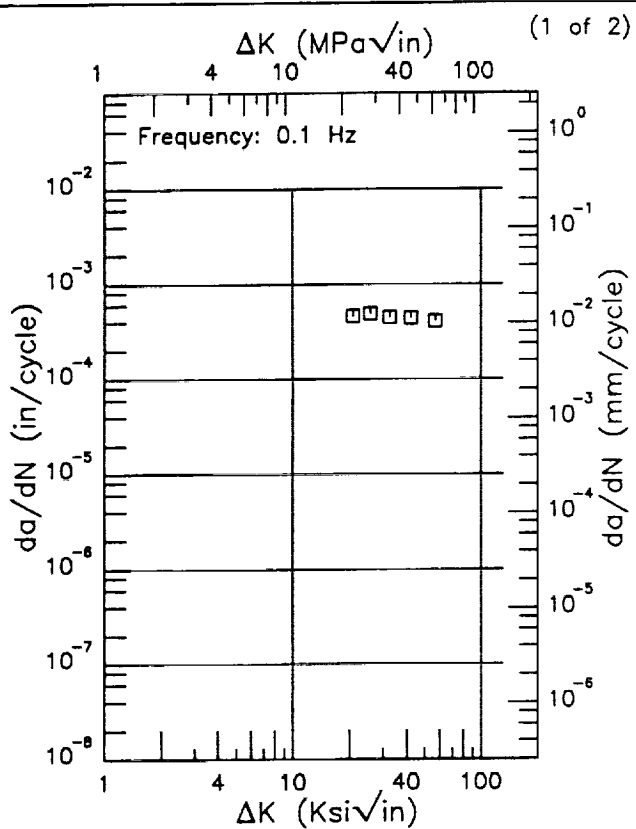
RMS %  
Error  
13.38

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

Condition/Ht: -99  
 Form:  
 Specimen Type: CT  
 Orientation: L-T  
 Stress Ratio: 0.05  
 Environment: 3.5% NACL; RT

Yield Strength: 245 ksi  
 Ult. Strength:  
 Specimen Thk: 0.25 in.  
 Specimen Width: 3.001 - 3.003 in.  
 Ref: F22

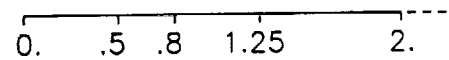


$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
9.50 (min)	1.62
10.	2.19
13.	7.06
16.	12.2
20.	15.9
25.	16.4
30.	17.8
35.	21.2
40.	22.7
49.35 (max)	62.0

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
9.50 (min)	1.62
10.	2.19
13.	7.06
16.	12.2
20.	15.9
25.	16.4
30.	17.8
35.	21.2
40.	22.7
49.35 (max)	62.0

RMS %  
Error

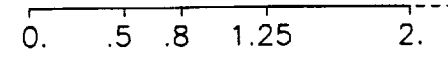
Life Prediction Ratio Summary



RMS %  
Error

41.76

Life Prediction Ratio Summary

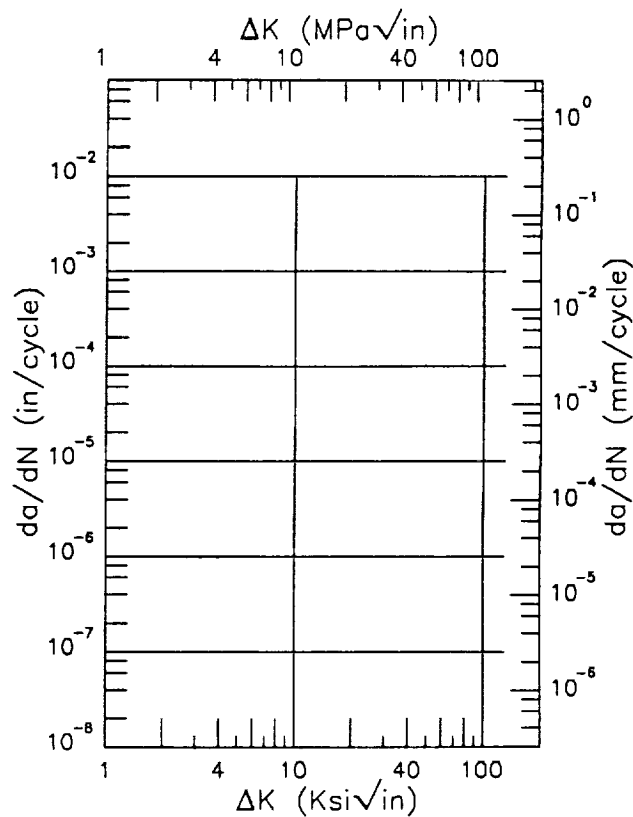
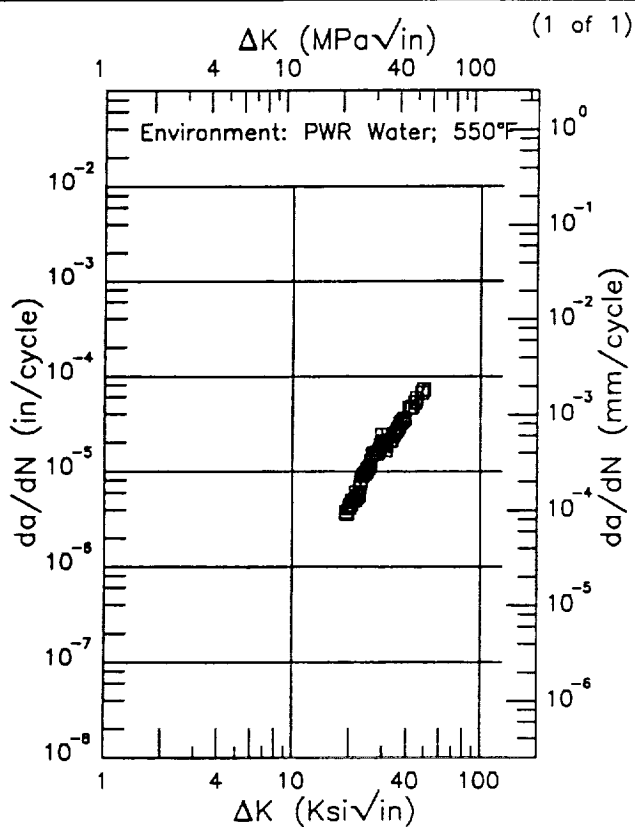


A106

E

Condition/Ht: -99  
 Form:  
 Specimen Type: CT  
 Orientation: T-L  
 Stress Ratio: 0.2  
 Frequency: 0. Hz

Yield Strength:  
 Ult. Strength:  
 Specimen Thk: 2 in.  
 Specimen Width: 5.1 in.  
 Ref: EPNAV



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
19.10 (min)	3.79
20.	4.15
25.	11.2
30.	18.5
35.	24.9
40.	40.3
49.30 (max)	72.1

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
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RMS %  
 Error  
 7.66

Life Prediction Ratio Summary  

 0. .5 .8 1.25 2.

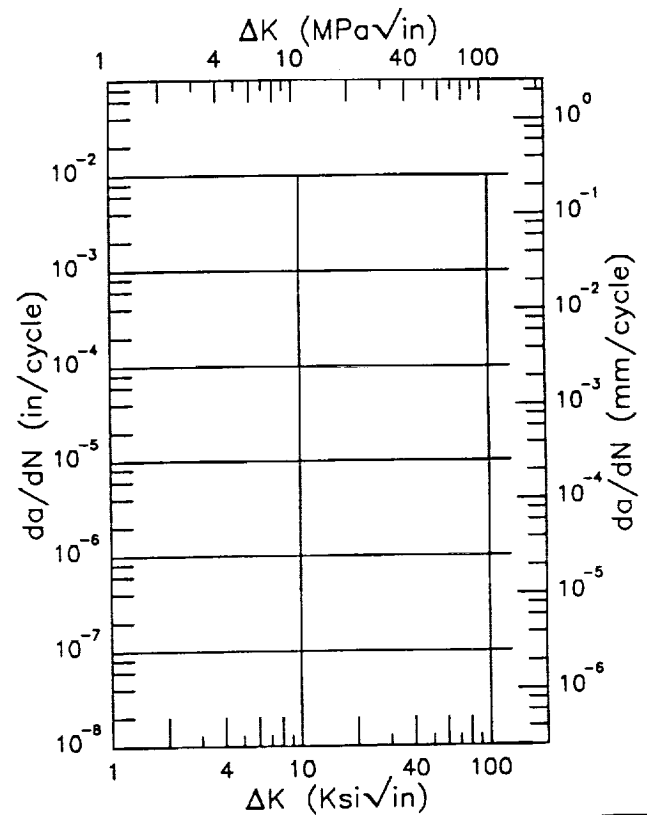
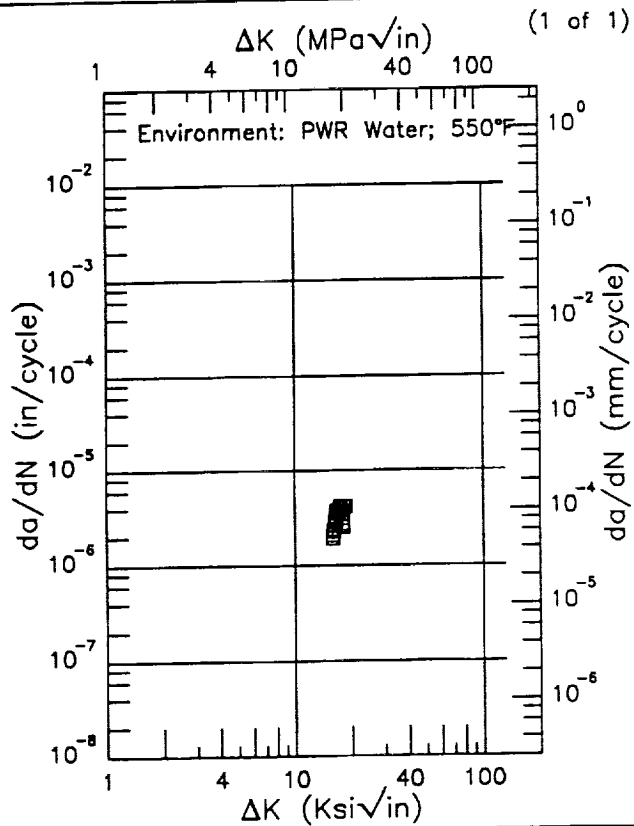
RMS %  
 Error

Life Prediction Ratio Summary  

 0. .5 .8 1.25 2.

Condition/Ht: -99  
 Form:  
 Specimen Type: CT  
 Orientation: C-L  
 Stress Ratio: 0.2  
 Frequency: 1 Hz

Yield Strength:  
 Ult. Strength:  
 Specimen Thk: 2 in.  
 Specimen Width: 5.1 in.  
 Ref: EPCUL



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
15.79 (min)	1.98
16.	2.42
18.40 (max)	4.56

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
--------------------------------------	-------------------------------

RMS %  
 Error  
 19.22

Life Prediction Ratio Summary

□

0. .5 .8 1.25 2.

RMS %  
 Error

Life Prediction Ratio Summary

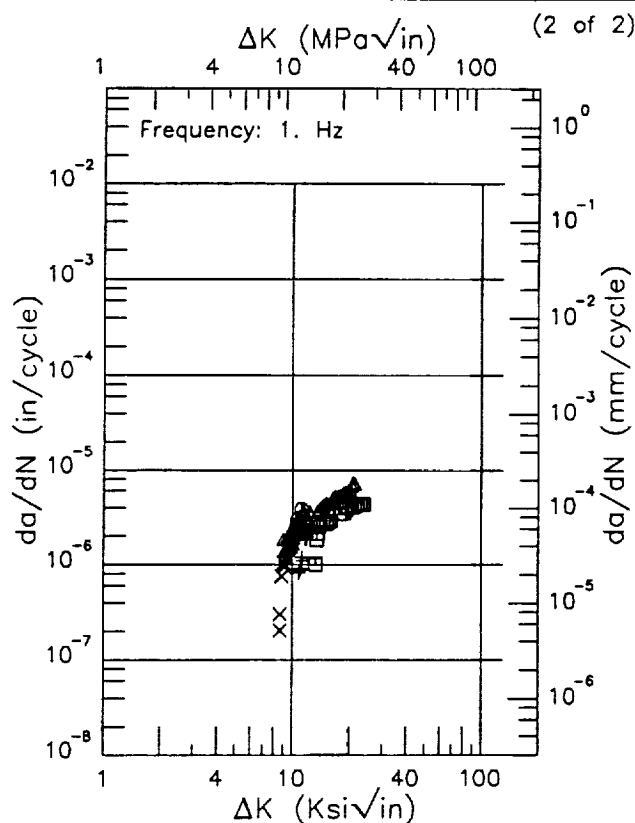
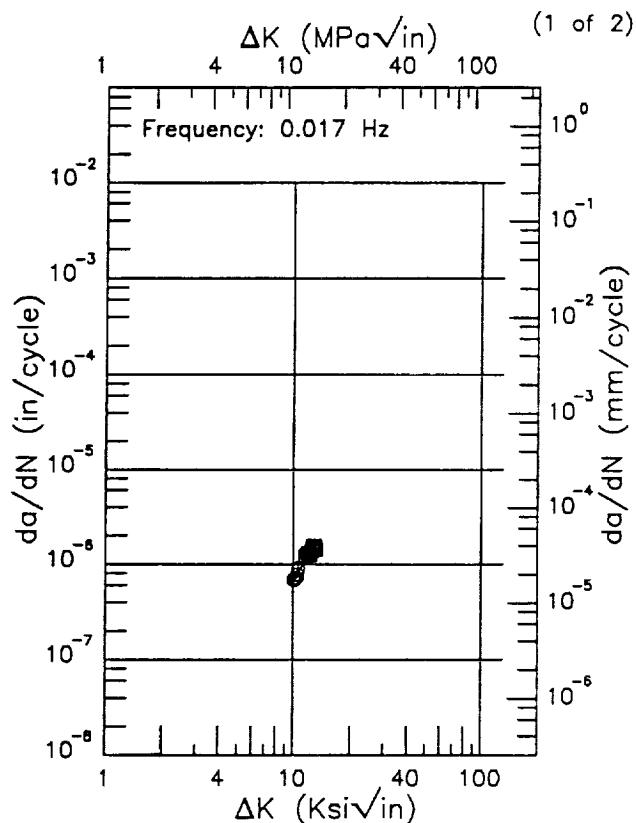
0. .5 .8 1.25 2.



F | A106 |

Condition/Ht: -99  
 Form:  
 Specimen Type: CT  
 Orientation: C-L  
 Stress Ratio: 0.7  
 Environment: PWR WATER;550°F

Yield Strength:  
 Ult. Strength:  
 Specimen Thk: 2 in.  
 Specimen Width: 5.1 in.  
 Ref: EPCUL



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
9.99 (min)	0.699
10.	0.694
13.	1.51
13.11 (max)	1.45

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
8.57 (min)	0.936
9.	1.11
10.	1.56
13.	2.92
16.	3.97
20.	4.77
23.82 (max)	5.07

RMS %  
 Error  
 6.68

Life Prediction Ratio Summary  
 0. .5 .8 1.25 2. ---

RMS %  
 Error  
 33.65

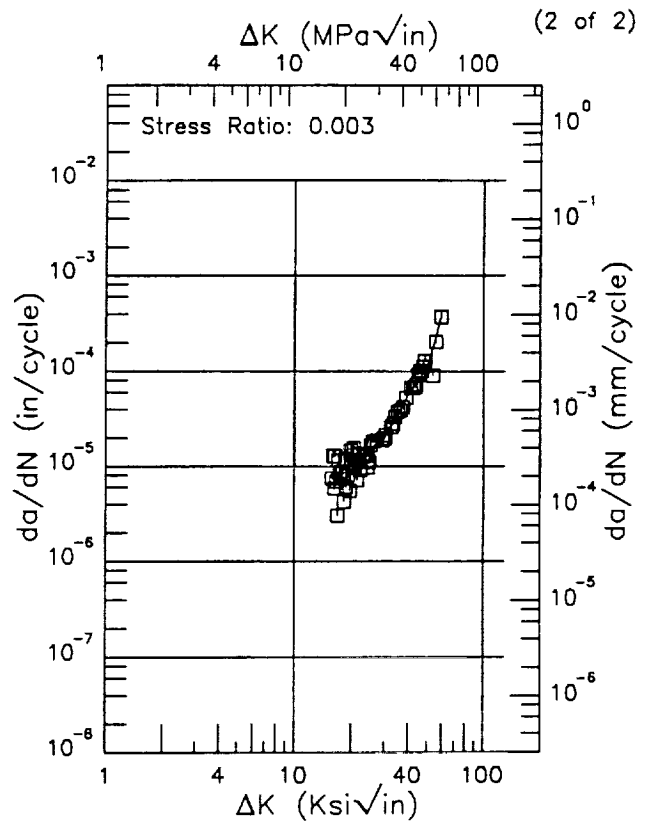
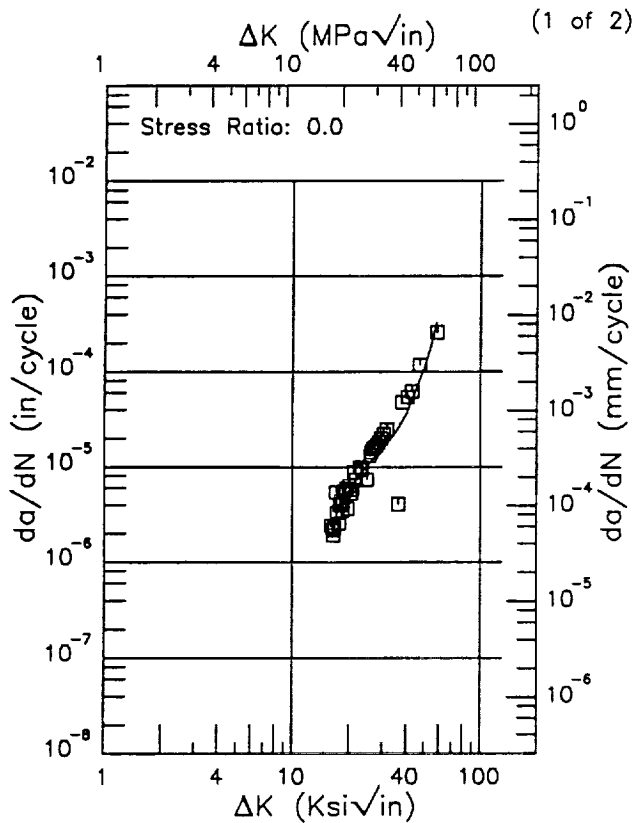
Life Prediction Ratio Summary  
 0. .5 .8 1.25 2. ---

B1-18

R | A148-84 |

Condition/Ht: NORMALIZED  
 Form:  
 Specimen Type: CT  
 Orientation:  
 Frequency: 20 Hz  
 Environment: LAB AIR; RT

Yield Strength: 62.2 ksi  
 Ult. Strength: 94 ksi  
 Specimen Thk: 0.8 in.  
 Specimen Width: 4 in.  
 Ref: UT001



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
16.05 (min)	2.35
20.	5.79
25.	10.4
30.	15.5
35.	23.0
40.	35.9
50.	109.
58.00 (max)	326.

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
15.74 (min)	7.94
16.	7.86
20.	9.15
25.	14.5
30.	21.8
35.	33.3
40.	57.3
50.	109.
59.42 (max)	390.

RMS %  
 Error  
 31.59

Life Prediction Ratio Summary  
 0. .5 .8 1.25 2.

RMS %  
 Error  
 25.49

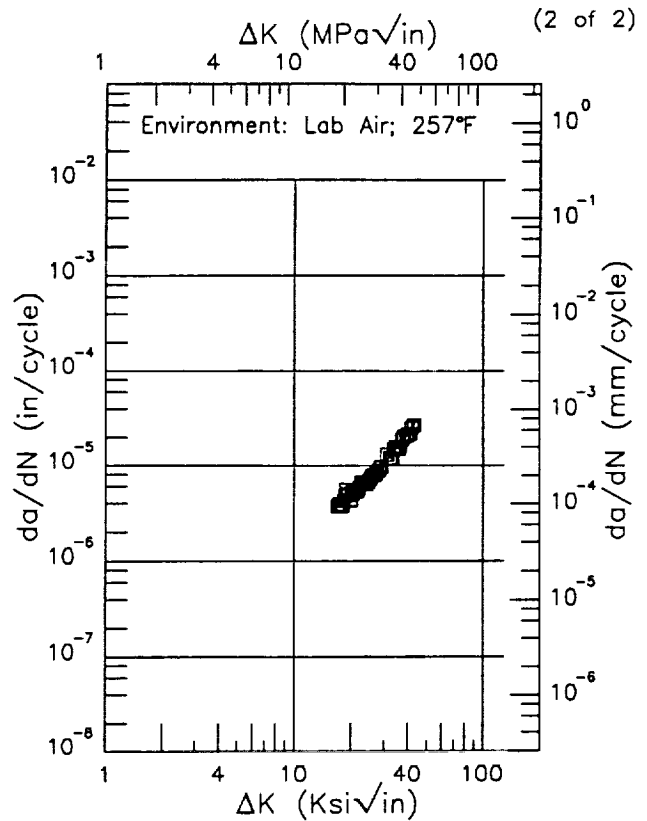
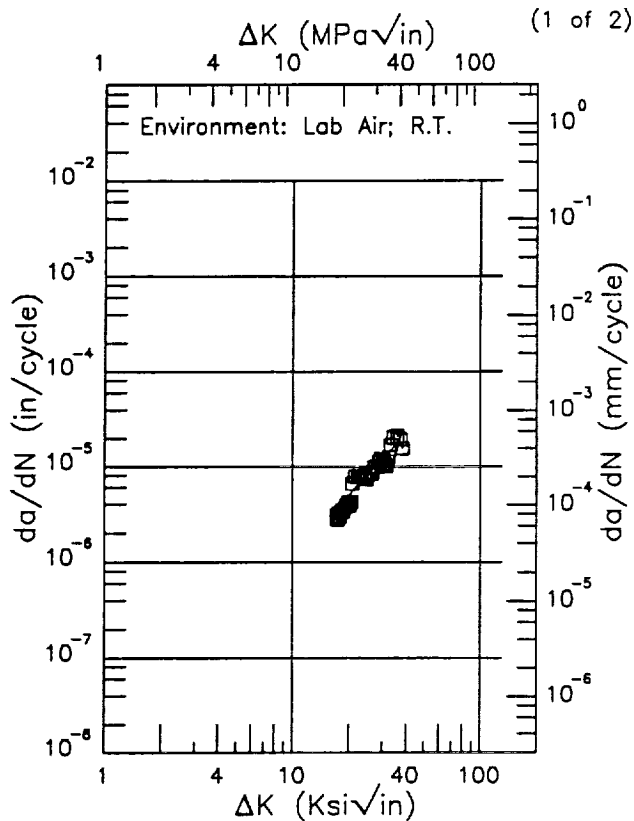
Life Prediction Ratio Summary  
 0. .5 .8 1.25 2.

SECRET

E A471

Condition/Ht: -99  
Form: Forging  
Specimen Type: CT  
Orientation:  
Stress Ratio: 0.5  
Frequency: 10 Hz

Yield Strength: 150 ksi  
Ult. Strength: 167 ksi  
Specimen Thk: 1 in.  
Specimen Width: 2 in.  
Ref: EPOSU;EPBAT



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
16.98 (min)	2.44
20.	4.99
25.	8.60
30.	11.9
35.	16.9
38.14 (max)	22.3

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
16.93 (min)	3.59
20.	4.94
25.	7.11
30.	10.7
35.	15.7
40.	21.5
43.01 (max)	26.5

RMS %  
Error  
15.18

Life Prediction Ratio Summary  

0. .5 .8 1.25 2.

RMS %  
Error  
6.62

Life Prediction Ratio Summary  

0. .5 .8 1.25 2.

B1-21

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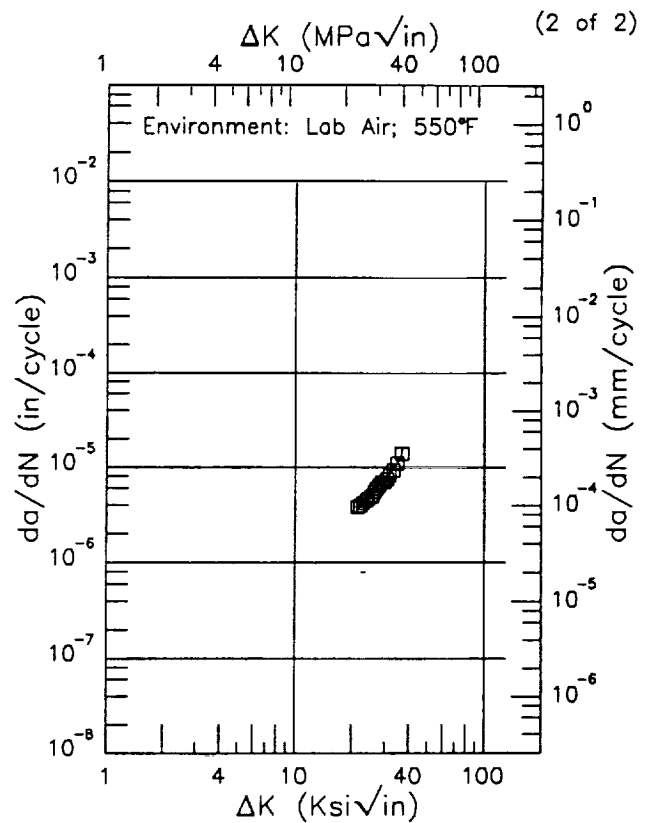
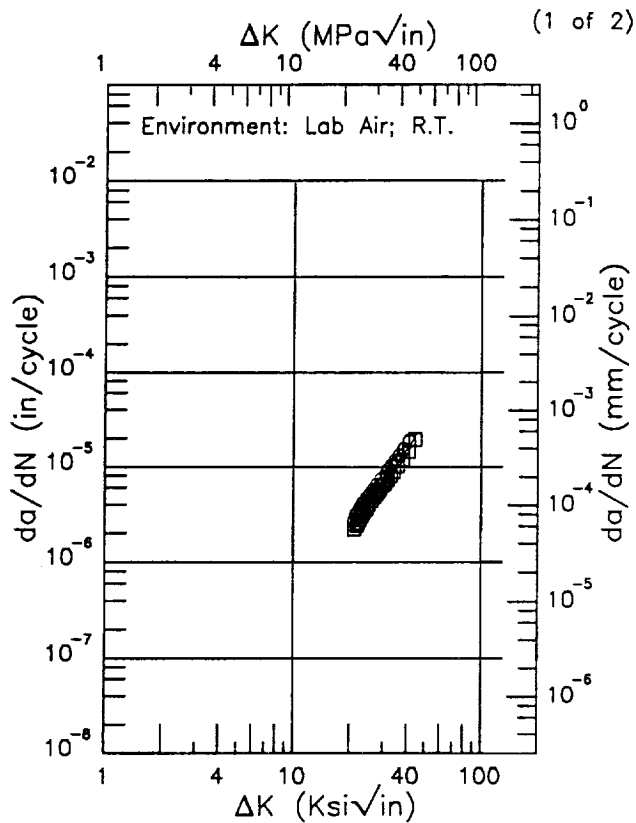
B1-22

A508

E

Condition/Ht: QUENCHED AND TEMPERED  
 Form: Forging  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.2  
 Frequency: 10 Hz

Yield Strength: 71.4 - 81.7 ksi  
 Ult. Strength: 90.4 - 102.8 ksi  
 Specimen Thk: 0.25 in.  
 Specimen Width: 2 in.  
 Ref: EPEFM



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
20.92 (min)	2.51
25.	4.22
30.	6.96
35.	10.5
40.	15.2
44.09 (max)	19.9

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
21.35 (min)	3.77
25.	4.90
30.	7.34
35.	11.2
36.57 (max)	13.8

RMS %  
 Error  
 12.09

Life Prediction Ratio Summary

□ ○

0. .5 .8 1.25 2.---

RMS %  
 Error  
 2.48

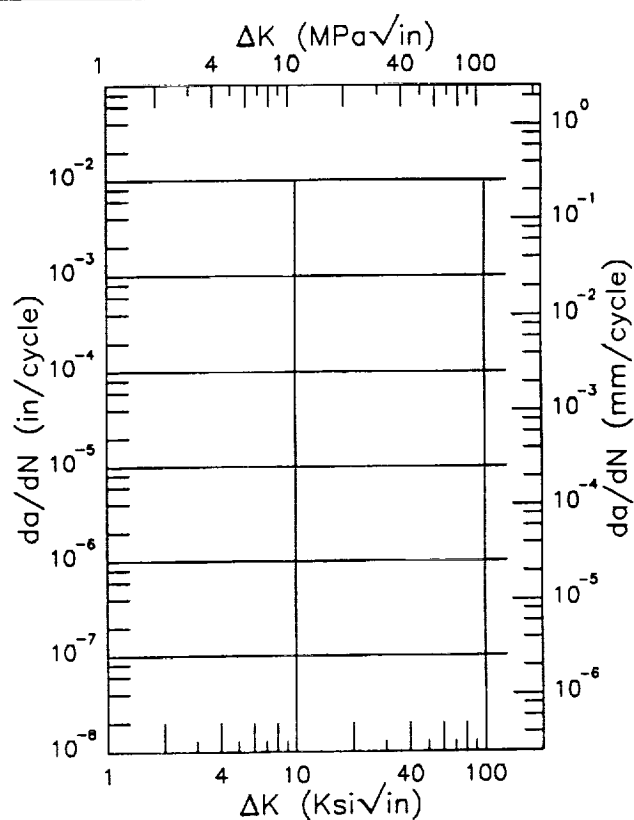
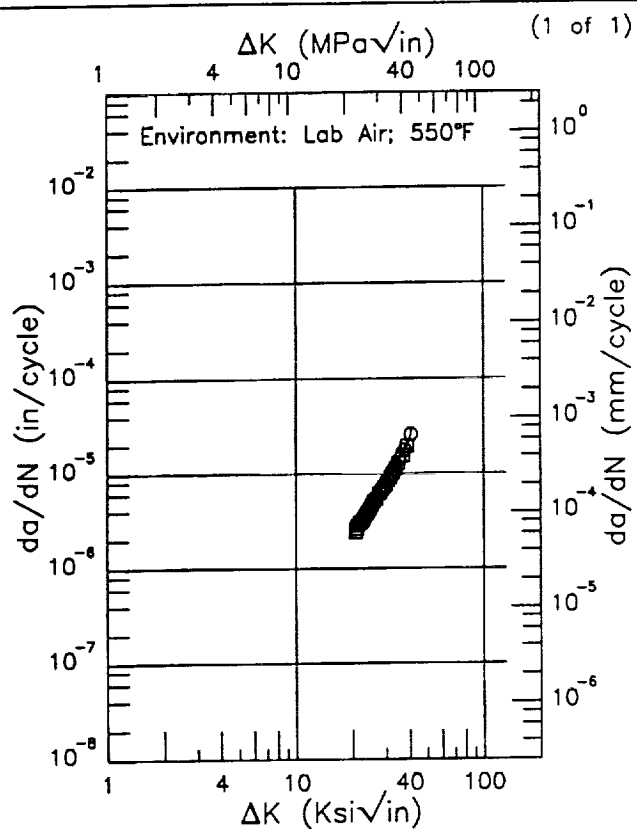
Life Prediction Ratio Summary

□

0. .5 .8 1.25 2.---

Condition/Ht: QUENCHED AND TEMPERED  
 Form: Forging  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.2  
 Frequency: 10 Hz

Yield Strength: 71.4 - 81.7 ksi  
 Ult. Strength: 90.4 - 102.8 ksi  
 Specimen Thk: 0.5 in.  
 Specimen Width: 4 in.  
 Ref: EPEFM



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
20.63 (min)	2.68
25.	4.57
30.	8.07
35.	13.1
40.	23.0
40.68 (max)	25.5

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
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RMS %  
 Error  
 3.76

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS %  
 Error

Life Prediction Ratio Summary

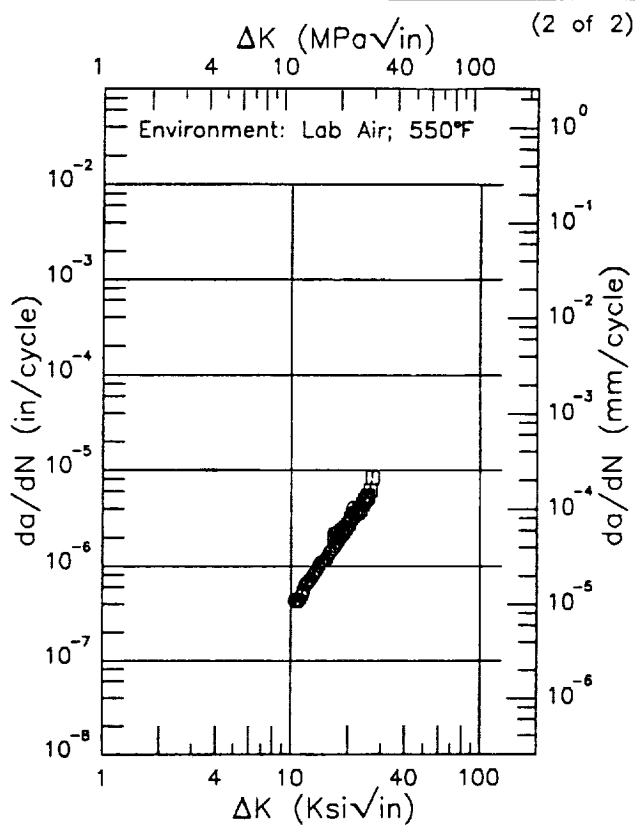
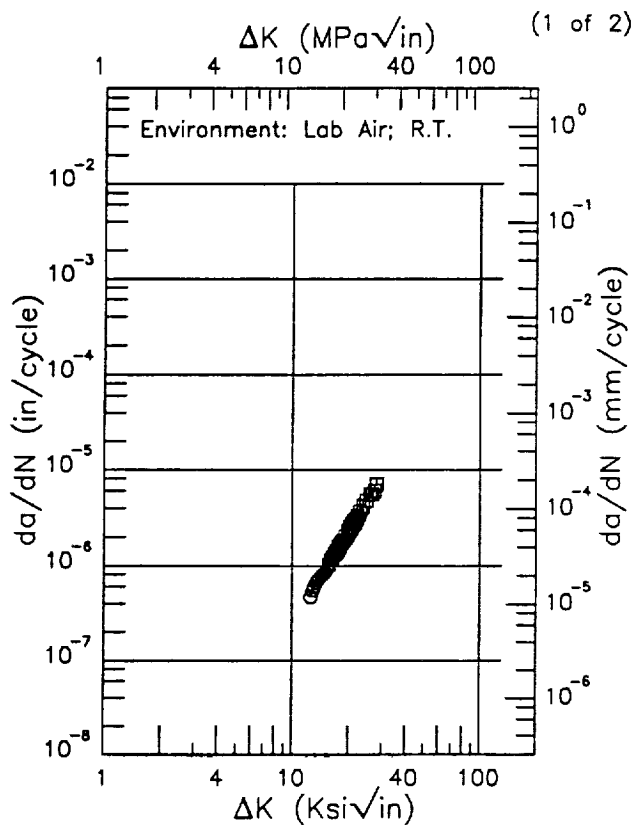
0. .5 .8 1.25 2.



E | A508 |

Condition/Ht: QUENCHED AND TEMPERED  
 Form: Forging  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.7  
 Frequency: 10 Hz

Yield Strength: 71.4 - 81.7 ksi  
 Ult. Strength: 90.4 - 102.8 ksi  
 Specimen Thk: 0.25 in.  
 Specimen Width: 2 in.  
 Ref: EPEFM



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
12.52 (min)	0.494
13.	0.572
16.	1.09
20.	2.26
25.	4.78
28.13 (max)	6.52

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
10.41 (min)	0.387
13.	0.781
16.	1.44
20.	2.80
25.	4.98
26.85 (max)	7.92

RMS %  
 Error  
 6.02

Life Prediction Ratio Summary  

 0. .5 .8 1.25 2.

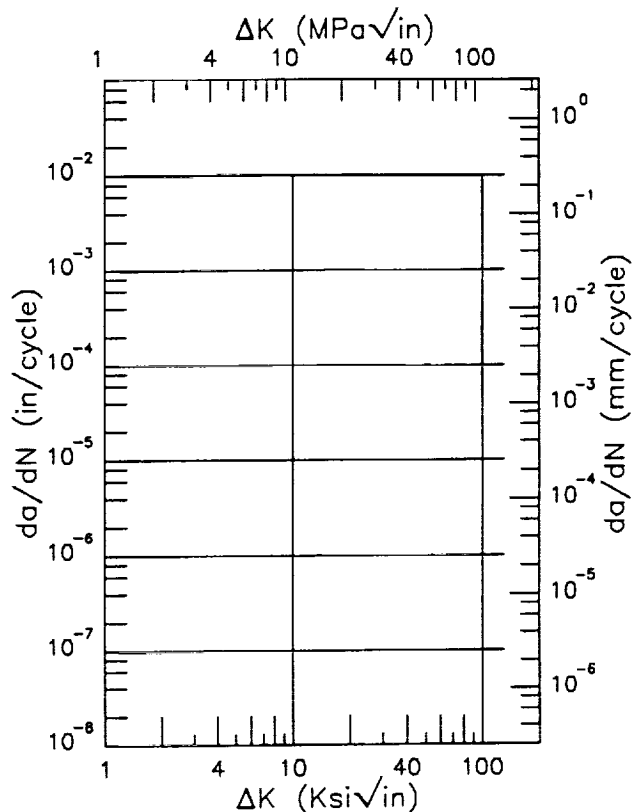
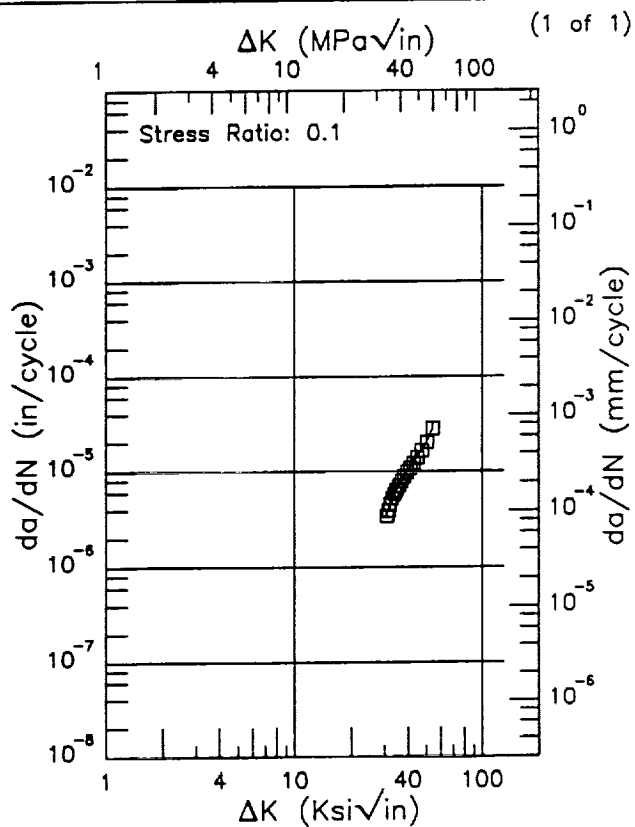
RMS %  
 Error  
 7.42

Life Prediction Ratio Summary  

 0. .5 .8 1.25 2.

Condition/Ht: QUENCHED AND TEMPERED  
 Form: Forging  
 Specimen Type: CCP (max load specified)  
 Orientation: L-S  
 Frequency: 4 Hz  
 Environment: LAB AIR; RT

Yield Strength: 69.2 ksi  
 Ult. Strength: 92. ksi  
 Specimen Thk: 0.591 in.  
 Specimen Width: 3.937 in.  
 Ref: EPISH



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
30.86 (min)	3.53
35.	6.63
40.	10.0
50.	19.3
54.00 (max)	27.7

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
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RMS %  
 Error  
 2.98

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

RMS %  
 Error

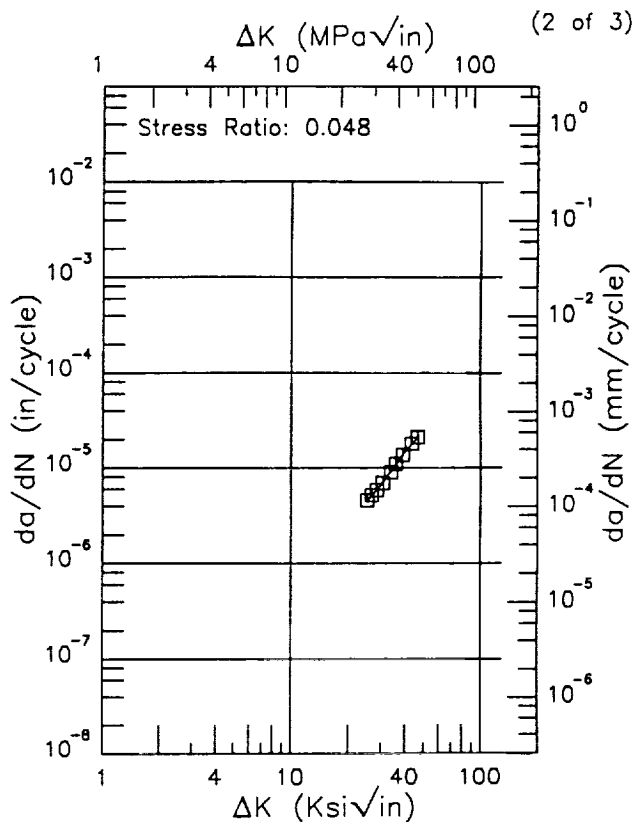
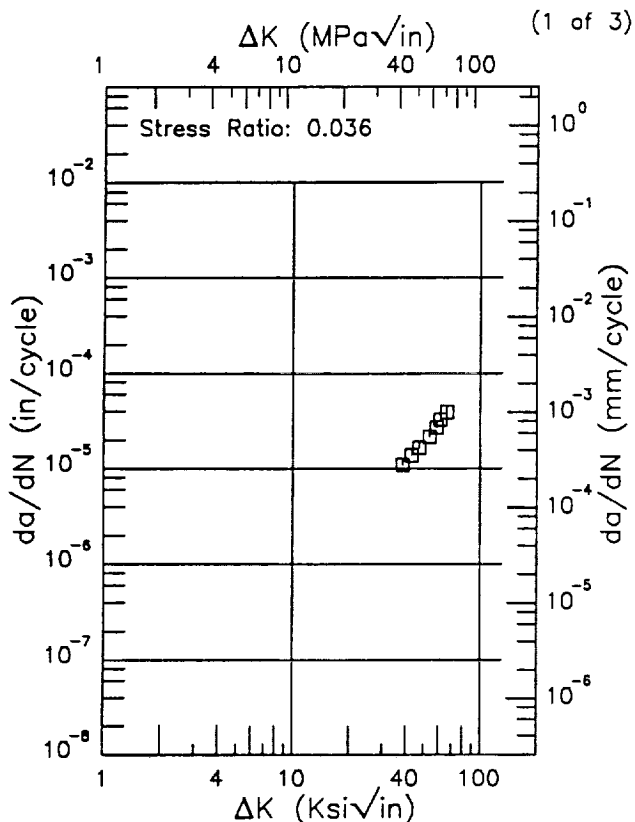
Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

R | A508 |

Condition/Ht: QUENCHED AND TEMPERED  
 Form: Weldment  
 Specimen Type: CT  
 Orientation: C-R  
 Frequency: 10 Hz  
 Environment: LAB AIR; RT

Yield Strength: 64.4 ksi  
 Ult. Strength: 89.3 ksi  
 Specimen Thk: 1 in.  
 Specimen Width: 2 in.  
 Ref: EPJAP



ΔK (Ksi√in)      da/dN (10<sup>-6</sup>in/cycle)

ΔK (Ksi√in)      da/dN (10<sup>-6</sup>in/cycle)

25.26 (min)	4.53
30.	6.61
35.	10.1
40.	14.6
46.58 (max)	20.8

RMS %  
Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

RMS %  
Error

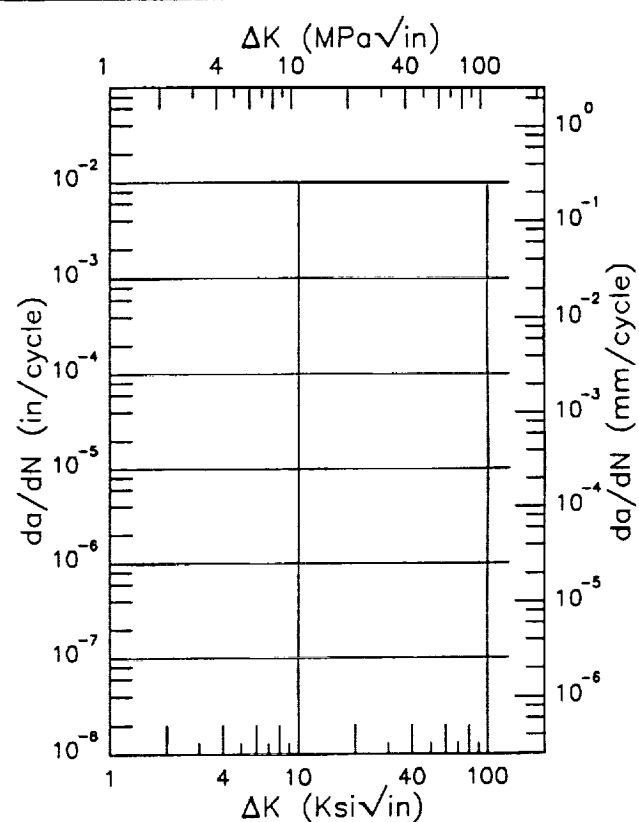
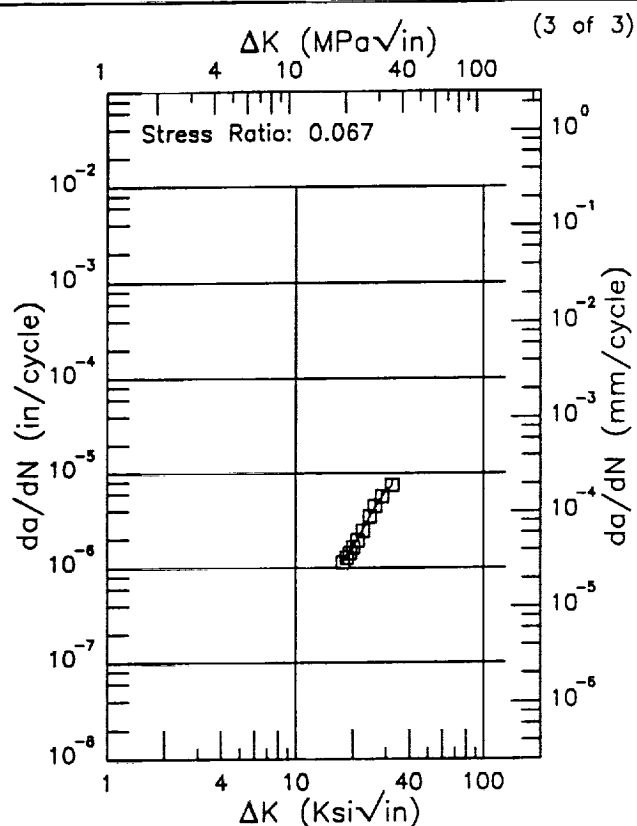
0.83

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

Condition/Ht: QUENCHED AND TEMPERED  
 Form: Weldment  
 Specimen Type: CT  
 Orientation: C-R  
 Frequency: 10 Hz  
 Environment: LAB AIR; RT

Yield Strength: 64.4 ksi  
 Ult. Strength: 89.3 ksi  
 Specimen Thk: 1 in.  
 Specimen Width: 2 in.  
 Ref: EPJAP

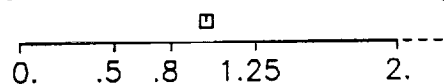


$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
17.59 (min)	1.13
20.	1.60
25.	3.66
30.	6.46
32.18 (max)	7.32

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
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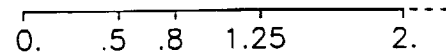
RMS %  
 Error  
 2.00

Life Prediction Ratio Summary



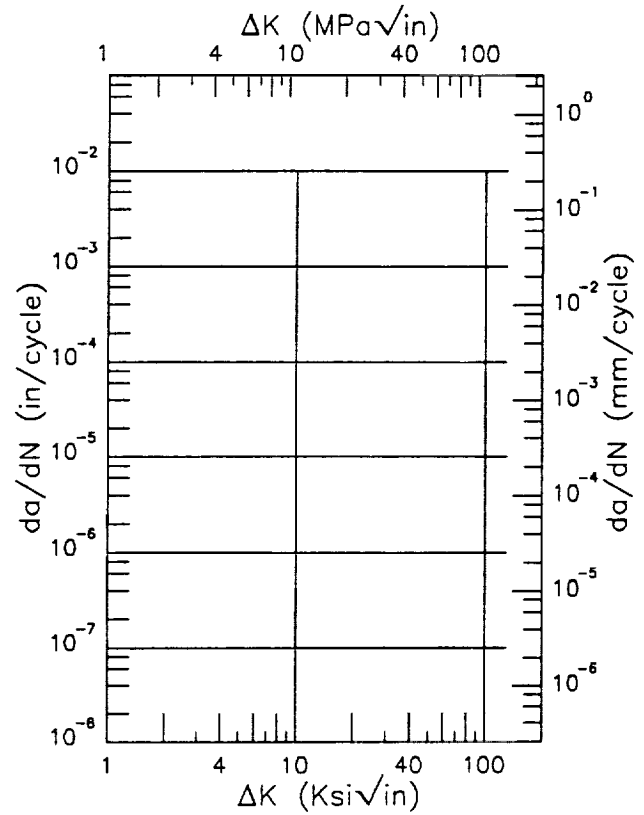
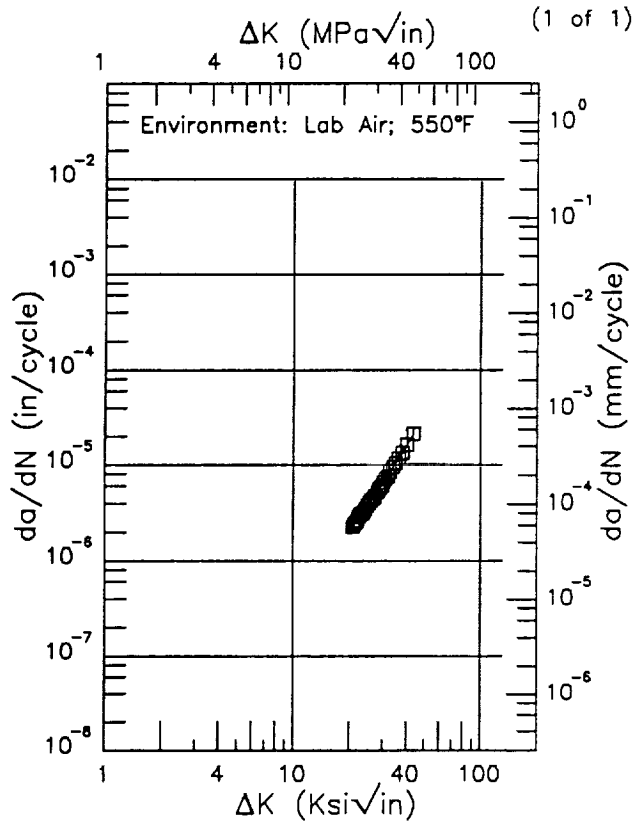
RMS %  
 Error

Life Prediction Ratio Summary



E | A508 |  
 Condition/Ht: QUENCHED AND TEMPERED  
 Form: Weldment  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.2  
 Frequency: 10 Hz

Yield Strength: 87.2 ksi  
 Ult. Strength: 97. ksi  
 Specimen Thk: 0.5 in.  
 Specimen Width: 4 in.  
 Ref: EPEFM



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
20.58 (min)	2.25
25.	3.83
30.	6.42
35.	10.4
40.	15.6
43.54 (max)	21.2

$\Delta K$  (Ksi $\sqrt{\text{in}}$ )       $da/dN$  ( $10^{-6}$  in/cycle)

RMS  $\times$   
 Error  
 1.35

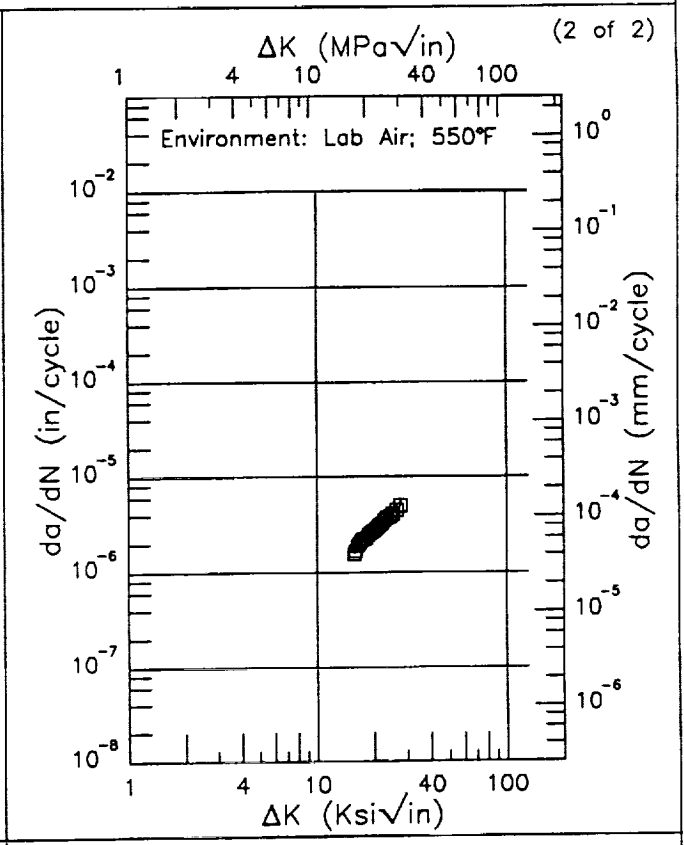
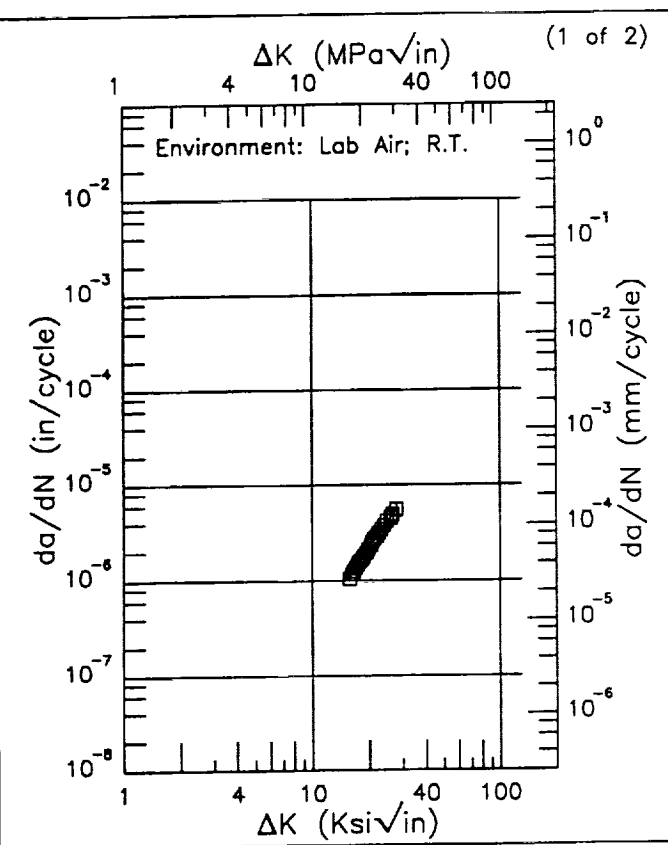
Life Prediction Ratio Summary  
 0. .5 .8 1.25 2. ---

RMS  $\times$   
 Error

Life Prediction Ratio Summary  
 0. .5 .8 1.25 2. ---

Condition/Ht: QUENCHED AND TEMPERED  
 Form: Weldment  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.7  
 Frequency: 10 Hz

Yield Strength: 87.2 ksi  
 Ult. Strength: 97. ksi  
 Specimen Thk: 0.25 in.  
 Specimen Width: 2 in.  
 Ref: EPEFM



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
15.65 (min)	1.07
16.	1.14
20.	2.27
25.	4.24
27.82 (max)	5.44

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
15.70 (min)	1.63
16.	1.73
20.	2.82
25.	4.05
27.41 (max)	4.92

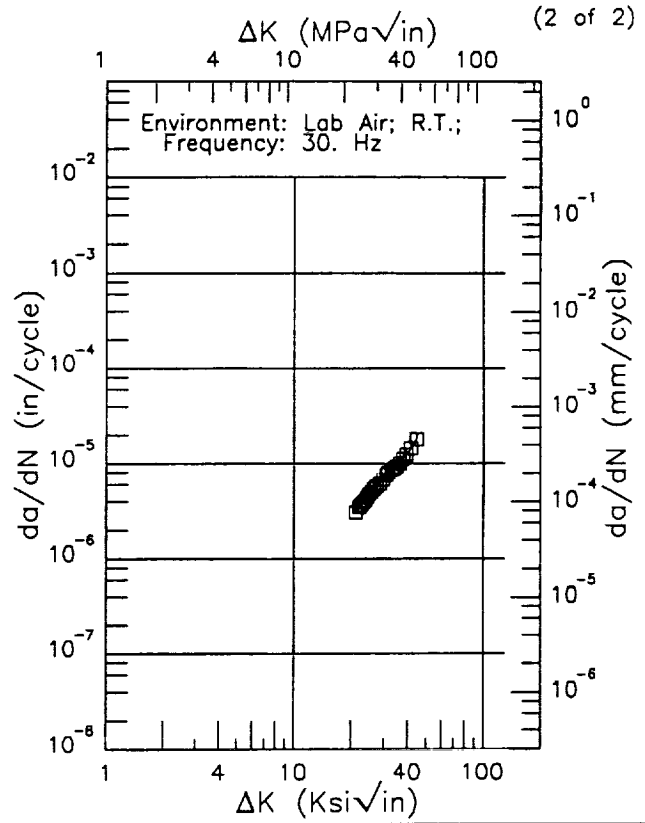
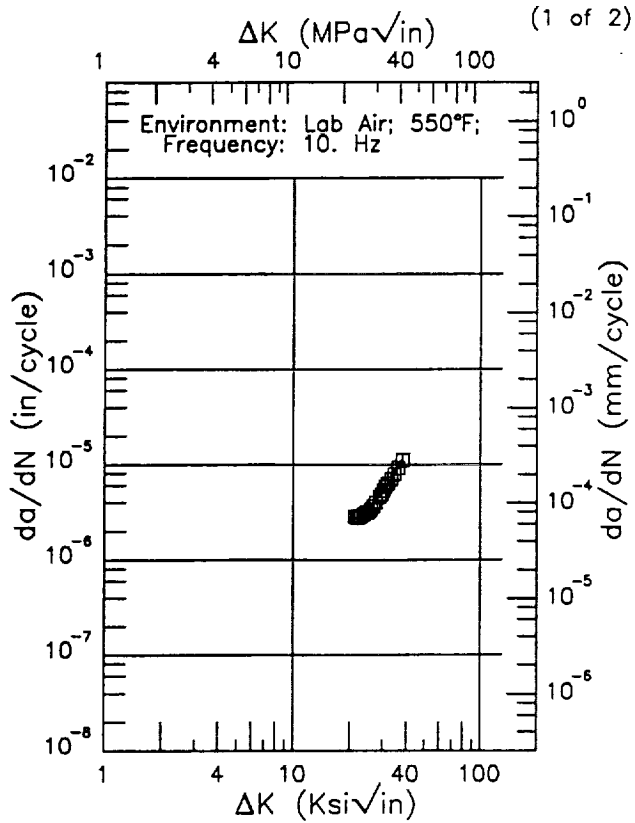
RMS % Error	Life Prediction Ratio Summary
1.61	

RMS % Error	Life Prediction Ratio Summary
3.04	

EF A508

Condition/Ht: QUENCHED AND TEMPERED  
 Form: Weldment  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.2

Yield Strength: 87.2 ksi  
 Ult. Strength: 97. ksi  
 Specimen Thk: 0.25 in.  
 Specimen Width: 2 in.  
 Ref: EPEFM



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
21.15 (min)	2.72
25.	3.17
30.	5.21
35.	8.32
38.13 (max)	11.1

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
21.27 (min)	3.09
25.	4.66
30.	7.02
35.	9.42
40.	12.9
44.23 (max)	17.8

RMS %  
 Error  
 1.91

Life Prediction Ratio Summary  
  
 0. .5 .8 1.25 2.

RMS %  
 Error  
 1.33

Life Prediction Ratio Summary  
  
 0. .5 .8 1.25 2.

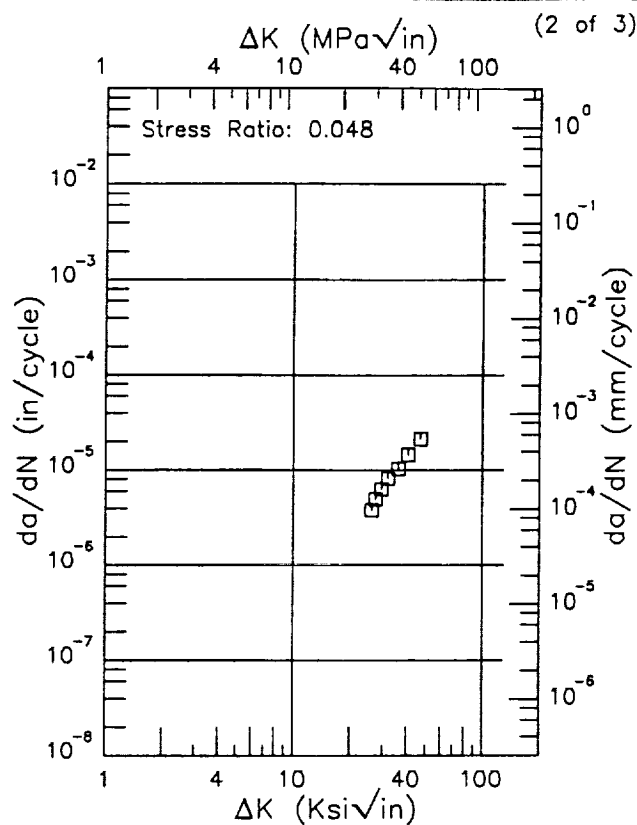
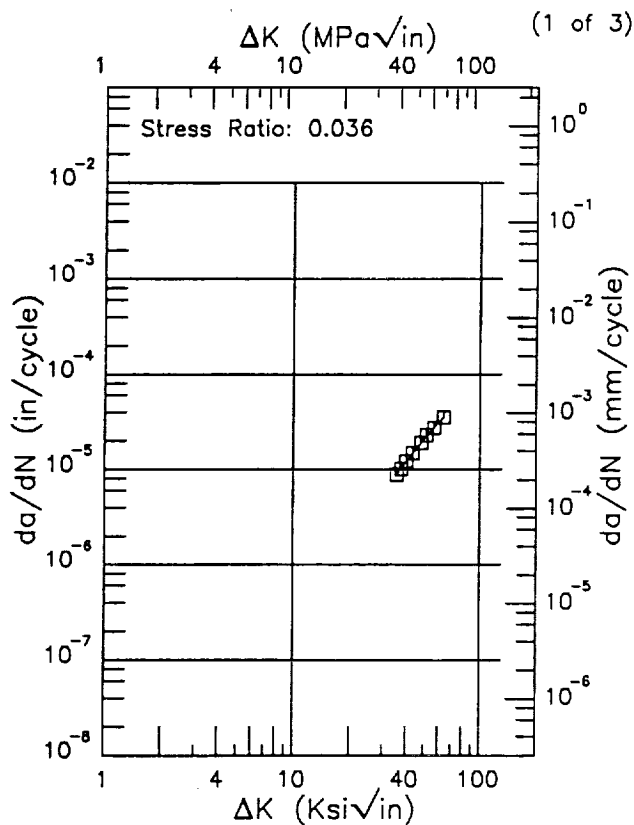
B1-32



R | A508 |

Condition/Ht: QUENCHED, TEMPERED, AND  
 Form: Forging  
 Specimen Type: CT  
 Orientation: R-C  
 Frequency: 10 Hz  
 Environment: LAB AIR; RT

Yield Strength: 65 ksi  
 Ult. Strength: 89.3 ksi  
 Specimen Thk: 1 in.  
 Specimen Width: 2 in.  
 Ref: EPJAP



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
35.49 (min)	8.75
40.	12.1
50.	21.0
60.	31.2
63.28 (max)	34.7

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
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RMS %  
 Error  
 0.56

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

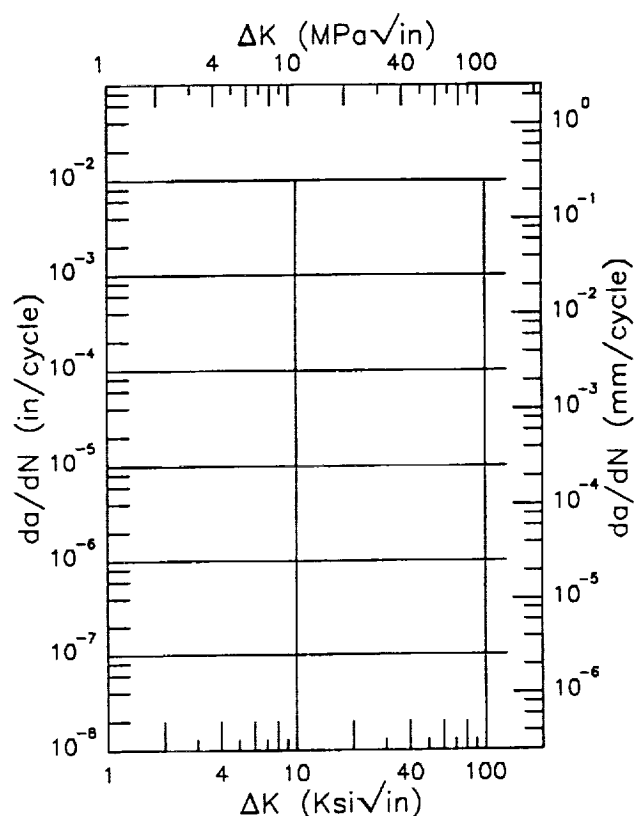
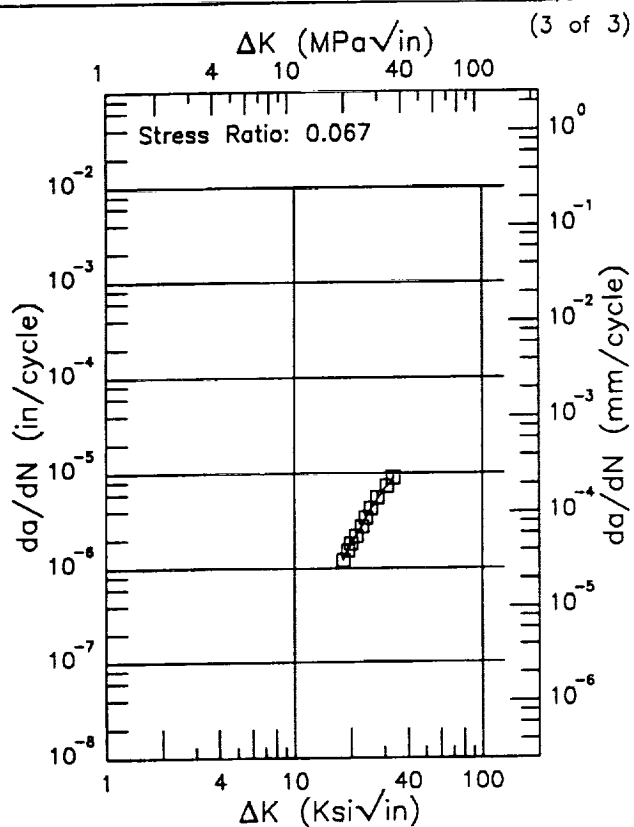
RMS %  
 Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

Condition/Ht: QUENCHED, TEMPERED, AND  
 Form: Forging  
 Specimen Type: CT  
 Orientation: R-C  
 Frequency: 10 Hz  
 Environment: LAB AIR; RT

Yield Strength: 65 ksi  
 Ult. Strength: 89.3 ksi  
 Specimen Thk: 1 in.  
 Specimen Width: 2 in.  
 Ref: EPJAP



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
17.99 (min)	1.23
20.	1.80
25.	4.03
30.	6.87
33.43 (max)	8.85

$\Delta K$  (Ksi $\sqrt{\text{in}}$ )      da/dN (10<sup>-6</sup> in/cycle)

RMS %  
 Error  
 2.29

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS %  
 Error

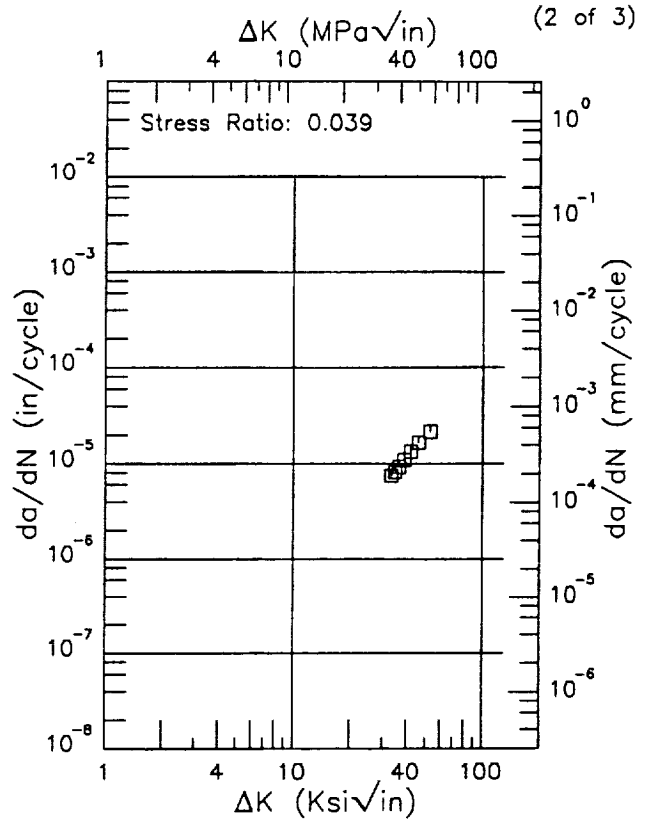
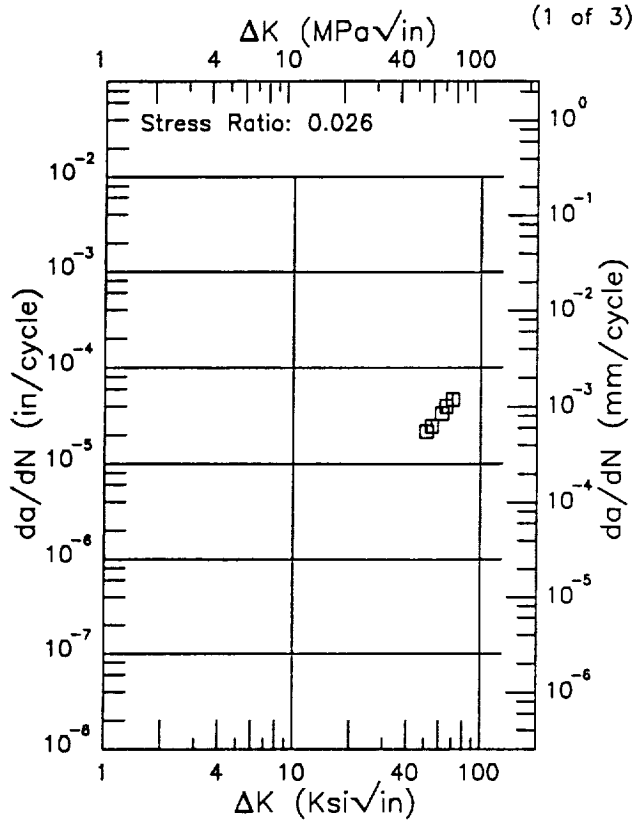
Life Prediction Ratio Summary

0. .5 .8 1.25 2.

R | A508 |

Condition/Ht: QUENCHED, TEMPERED, AND  
 Form: Forging  
 Specimen Type: CT  
 Orientation: C-R  
 Frequency: 10 Hz  
 Environment: LAB AIR; RT

Yield Strength: 64 ksi  
 Ult. Strength: 85.8 ksi  
 Specimen Thk: 1 in.  
 Specimen Width: 2 in.  
 Ref: EPJAP



$\Delta K$  (Ksi√in)       $da/dN$  ( $10^{-6}$  in/cycle)

$\Delta K$  (Ksi√in)       $da/dN$  ( $10^{-6}$  in/cycle)

RMS %  
Error

Life Prediction Ratio Summary

0.    .5    .8    1.25    2. ---

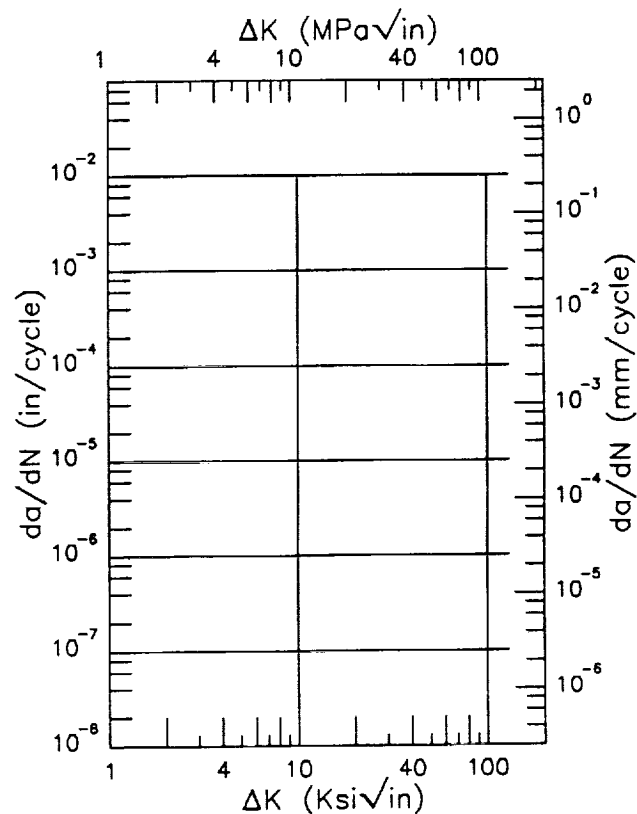
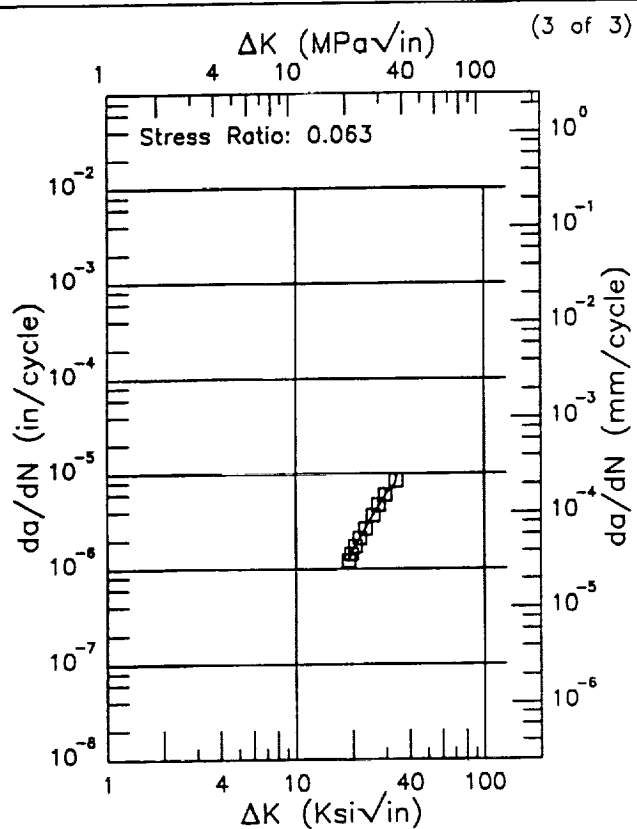
RMS %  
Error

Life Prediction Ratio Summary

0.    .5    .8    1.25    2. ---

Condition/Ht: QUENCHED, TEMPERED, AND  
 Form: Forging  
 Specimen Type: CT  
 Orientation: C-R  
 Frequency: 10 Hz  
 Environment: LAB AIR; RT

Yield Strength: 64 ksi  
 Ult. Strength: 85.8 ksi  
 Specimen Thk: 1 in.  
 Specimen Width: 2 in.  
 Ref: EPJAP



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ (10 <sup>-6</sup> in/cycle)
18.85 (min)	1.20
20.	1.59
25.	3.46
30.	6.11
33.83 (max)	8.34

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ (10 <sup>-6</sup> in/cycle)
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RMS %  
 Error  
 1.58

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS %  
 Error

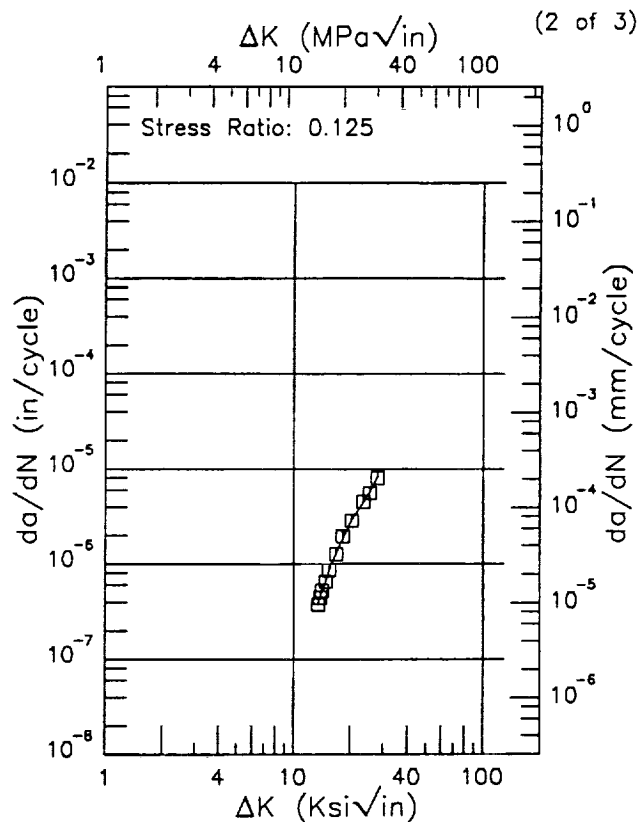
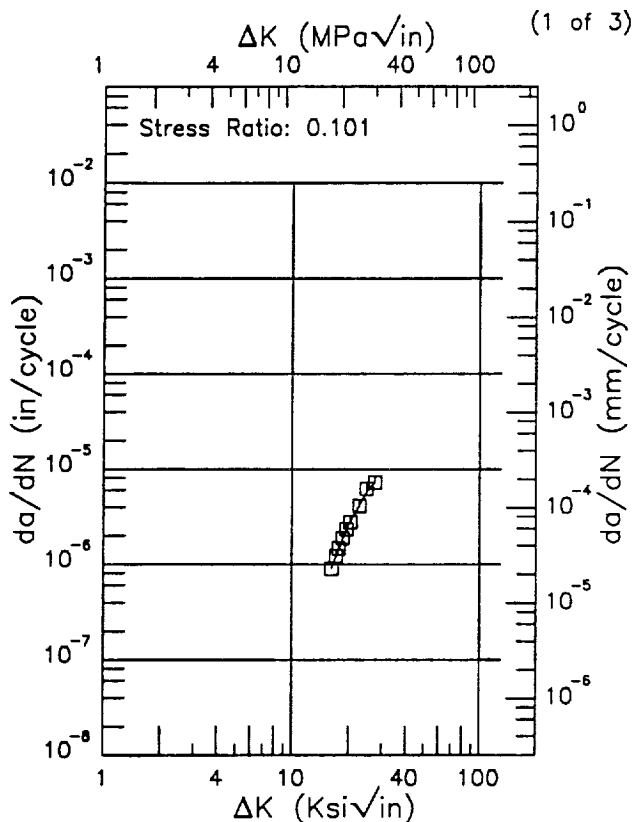
Life Prediction Ratio Summary

0. .5 .8 1.25 2.

R | A508 |

Condition/Ht: QUENCHED, TEMPERED, AND  
 Form: Forging  
 Specimen Type: CCP (max load specified)  
 Orientation: L-T  
 Frequency: 5 Hz  
 Environment: LAB AIR; RT

Yield Strength: 63. ksi  
 Ult. Strength: 85.9 ksi  
 Specimen Thk: 0.394 in.  
 Specimen Width: 7.087 in.  
 Ref: EPFUND



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
16.22 (min)	0.920
20.	2.59
25.	5.96
27.50 (max)	7.37

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
13.48 (min)	0.388
16.	1.02
20.	2.75
25.	5.39
27.66 (max)	8.00

RMS %  
 Error  
 3.88

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

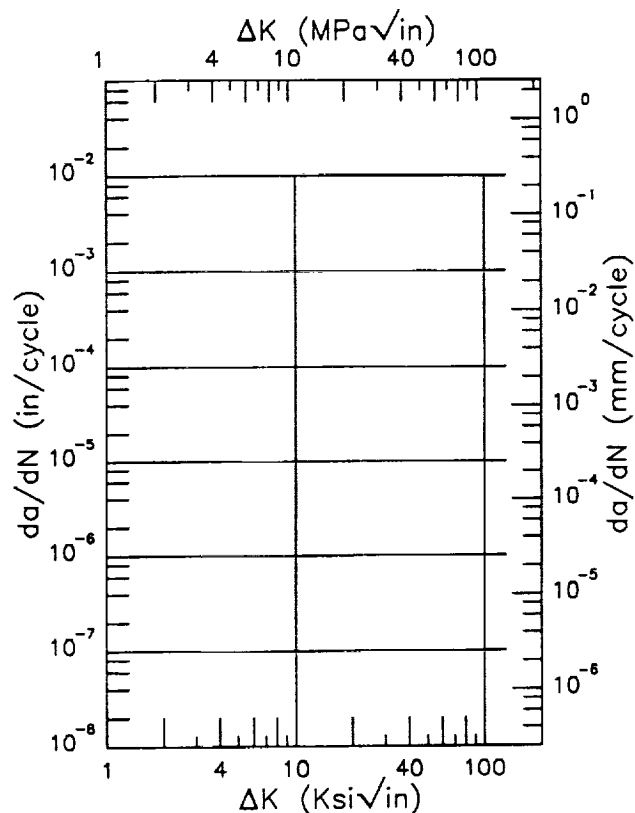
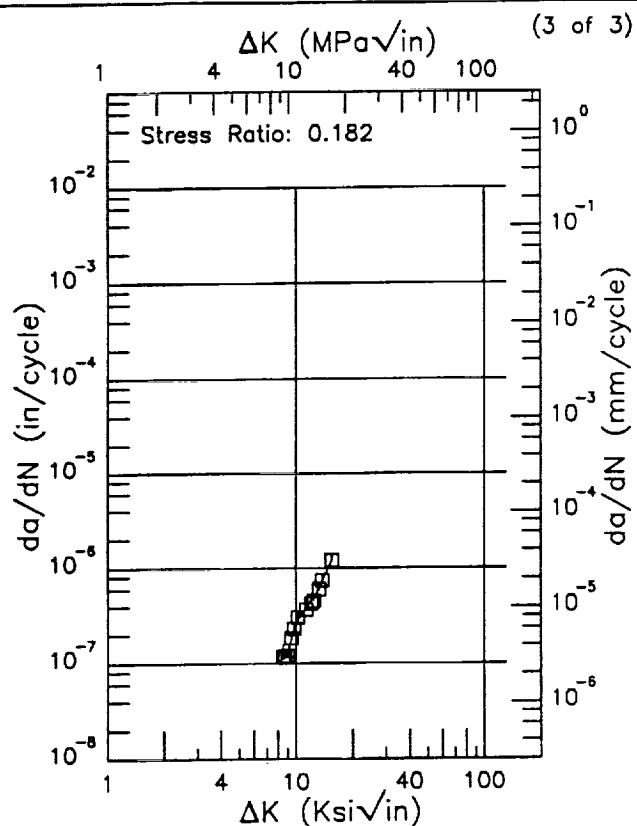
RMS %  
 Error  
 3.31

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

Condition/Ht: QUENCHED, TEMPERED, AND  
 Form: Forging  
 Specimen Type: CCP (max load specified)  
 Orientation: L-T  
 Frequency: 5 Hz  
 Environment: LAB AIR; RT

Yield Strength: 63. ksi  
 Ult. Strength: 85.9 ksi  
 Specimen Thk: 0.394 in.  
 Specimen Width: 7.087 in.  
 Ref: EPFUN



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
8.53 (min)	0.111
9.	0.128
10.	0.273
13.	0.565
15.44 (max)	1.19

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
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RMS %  
 Error  
 5.15

Life Prediction Ratio Summary  

 0. .5 .8 1.25 2.

RMS %  
 Error

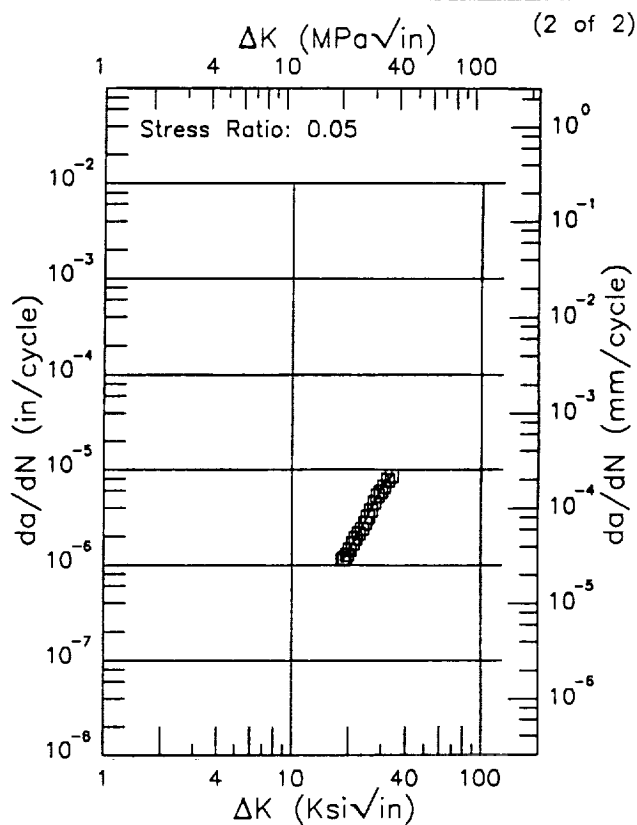
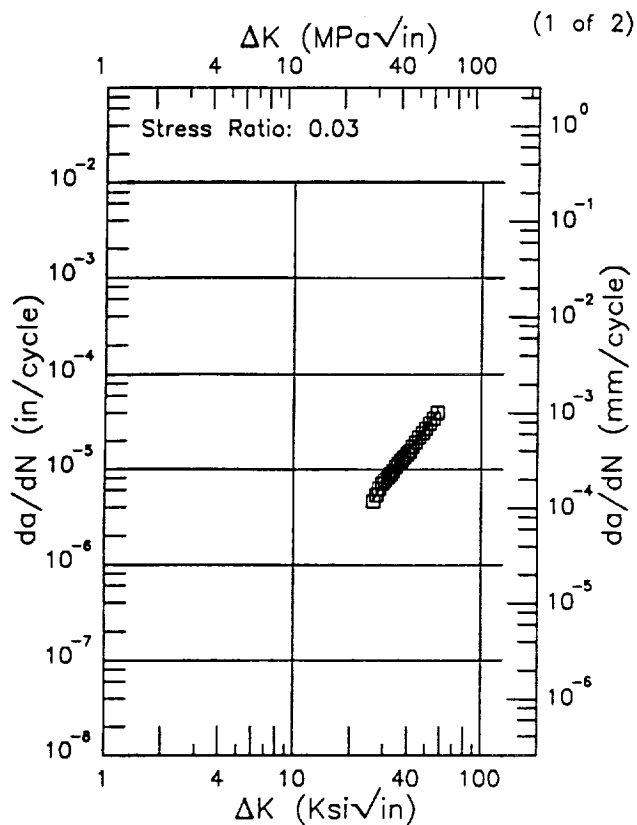
Life Prediction Ratio Summary  

 0. .5 .8 1.25 2.

R A508

Condition/Ht: QUENCHED, TEMPERED, AND  
 Form: Forging  
 Specimen Type: CT  
 Orientation: T-L  
 Frequency: 20 Hz  
 Environment: LAB AIR; RT

Yield Strength: 66.6 ksi  
 Ult. Strength: 87.8 ksi  
 Specimen Thk: 0.984 in.  
 Specimen Width: 2.559 in.  
 Ref: EPKOB



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
26.36 (min)	4.63
30.	7.33
35.	10.7
40.	14.6
50.	26.8
57.73 (max)	39.2

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
18.52 (min)	1.08
20.	1.38
25.	3.07
30.	6.31
33.71 (max)	8.60

RMS %  
 Error  
 1.27

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

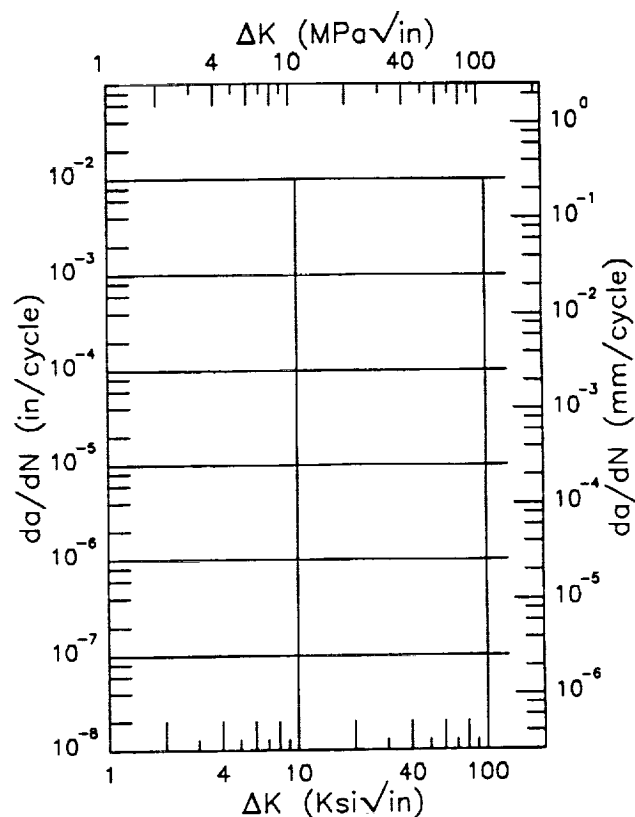
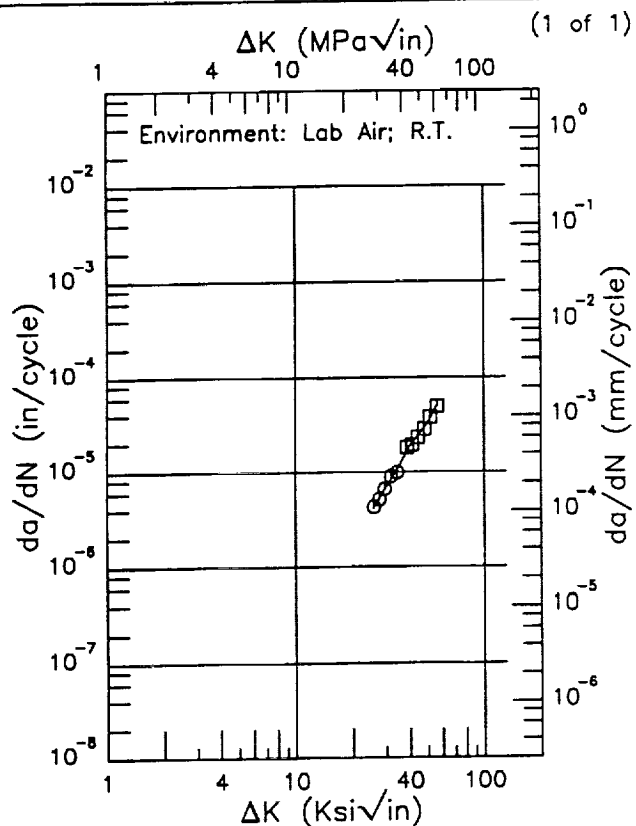
RMS %  
 Error  
 2.42

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

Condition/Ht: QUENCHED, TEMPERED, AND  
 Form: Forging  
 Specimen Type:  
 Orientation: T-S  
 Stress Ratio: 0.  
 Frequency: 1 Hz

Yield Strength: 69.6 ksi  
 Ult. Strength: 82.4 ksi  
 Specimen Thk: 0.65 in.  
 Specimen Width: 1.654 in.  
 Ref: EPBAB



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
25.72 (min)	4.15
30.	6.99
35.	11.5
40.	18.7
50.	33.3
55.82 (max)	49.2

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
--------------------------------------	-----------------------------------

RMS %  
 Error  
 5.07

Life Prediction Ratio Summary

0. 0.5 .8 1.25 2.

RMS %  
 Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

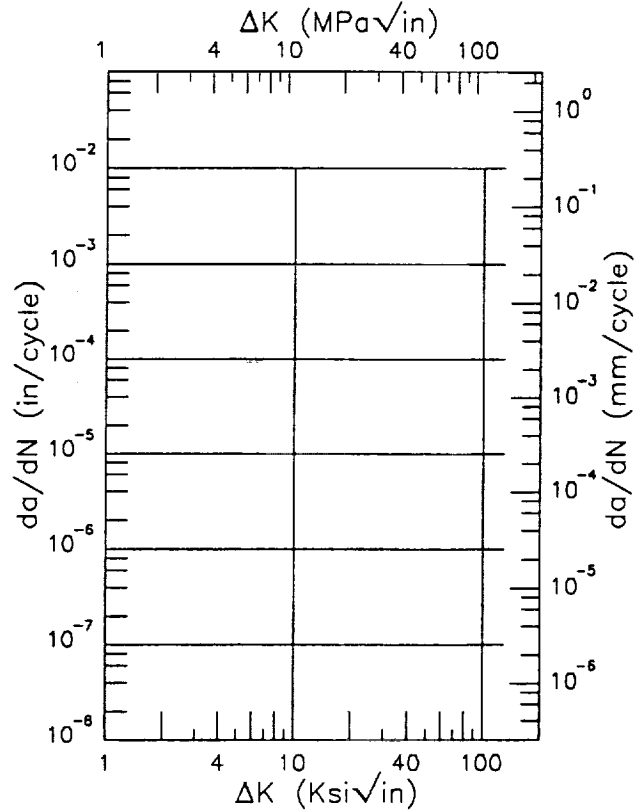
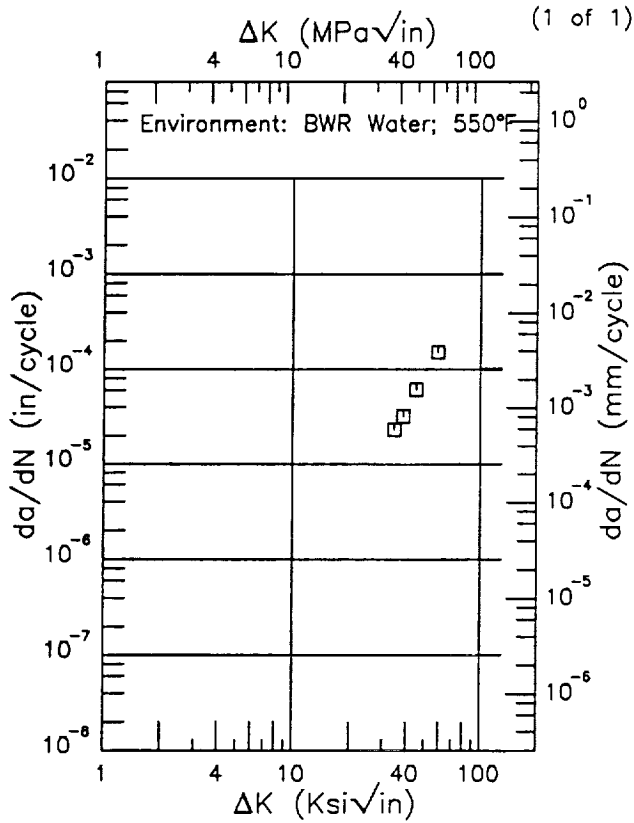


A508

E

Condition/Ht: QUENCHED, TEMPERED, AND  
 Form:  
 Specimen Type: CT  
 Orientation: T-L  
 Stress Ratio: 0.2  
 Frequency: 0. Hz

Yield Strength: 67.7 ksi  
 Ult. Strength: 87. ksi  
 Specimen Thk: 0.492 in.  
 Specimen Width: 2.559 in.  
 Ref: EPRLK



$\Delta K$  (Ksi√in)       $da/dN$  ( $10^{-6}$  in/cycle)

$\Delta K$  (Ksi√in)       $da/dN$  ( $10^{-6}$  in/cycle)

RMS %  
Error

Life Prediction Ratio Summary

0.   .5   .8   1.25   2. ---

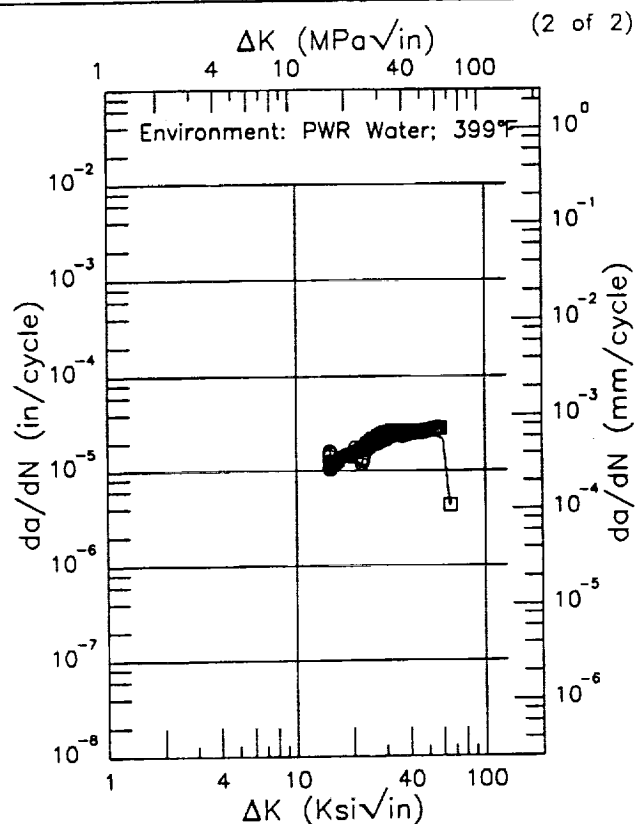
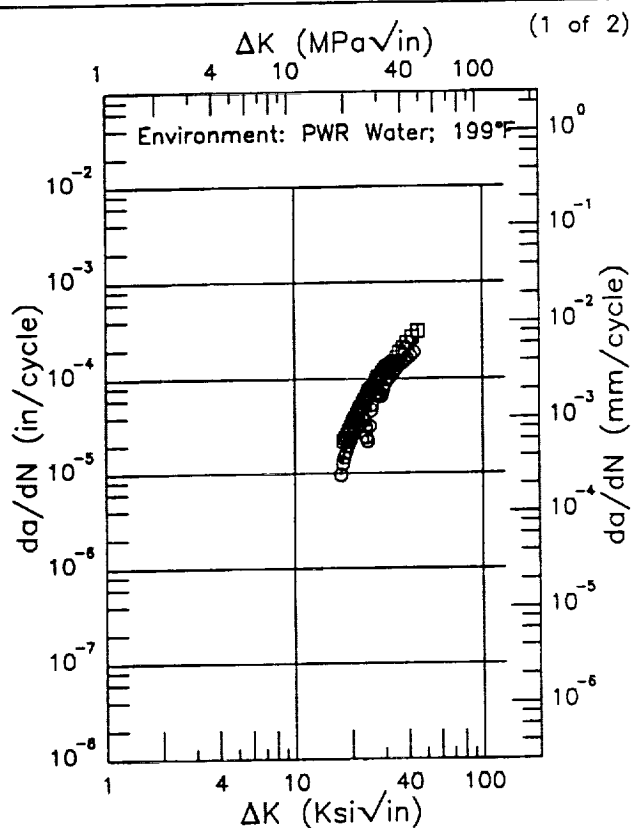
RMS %  
Error

Life Prediction Ratio Summary

0.   .5   .8   1.25   2. ---

Condition/Ht: STRESS RELIEVED  
 Form: Forging  
 Specimen Type: CT  
 Orientation: T-L  
 Stress Ratio: 0.2  
 Frequency: 0. Hz

Yield Strength: 78. ksi  
 Ult. Strength: 98.6 ksi  
 Specimen Thk: 1 in.  
 Specimen Width: 2 in.  
 Ref: EPCUL



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
17.49 (min)	13.2
20.	27.3
25.	63.1
30.	101.
35.	142.
40.	193.
44.72 (max)	260.

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
14.88 (min)	12.5
16.	12.7
20.	14.8
25.	18.7
30.	22.7
35.	25.6
40.	26.4
50.	26.2
60.	21.9
65.20 (max)	4.27

RMS %  
 Error  
 22.83

Life Prediction Ratio Summary

○ □

0. .5 .8 1.25 2.

RMS %  
 Error  
 10.19

Life Prediction Ratio Summary

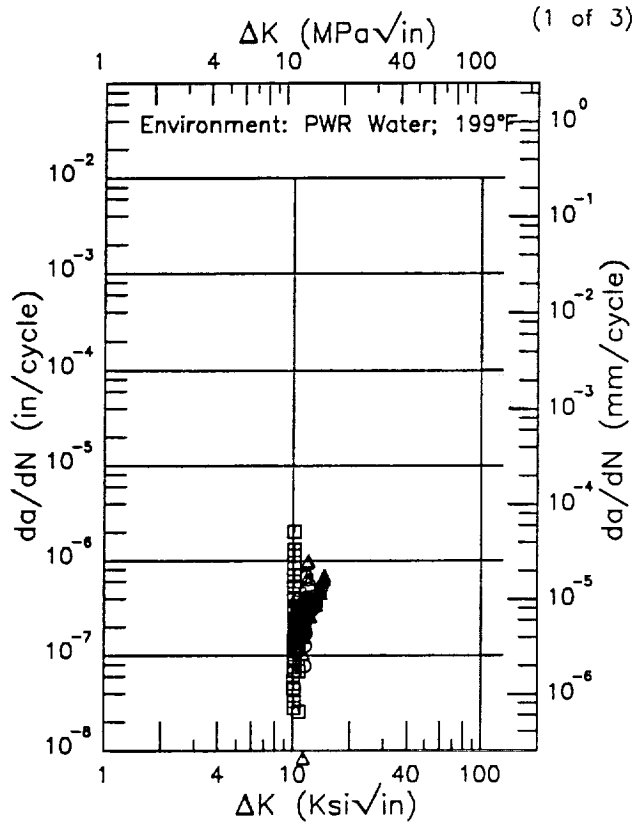
○ □

0. .5 .8 1.25 2.

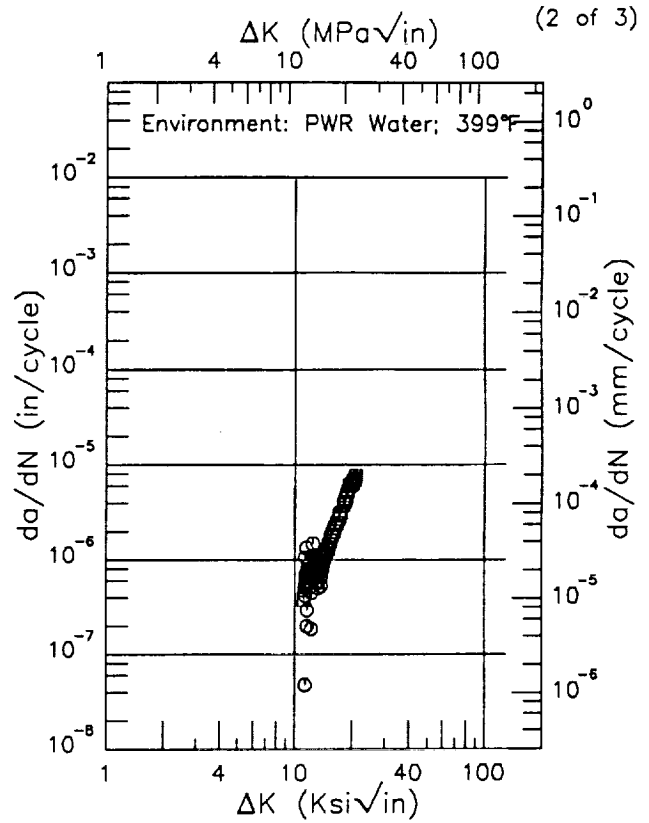
E | A508 |

Condition/Ht: STRESS RELIEVED  
 Form: Forging  
 Specimen Type: CT  
 Orientation: T-L  
 Stress Ratio: 0.2  
 Frequency: 1 Hz

Yield Strength: 78. ksi  
 Ult. Strength: 98.6 ksi  
 Specimen Thk: 1 in.  
 Specimen Width: 2 in.  
 Ref: EPCUL



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
10.05 (min)	0.135
13.	0.380
14.65 (max)	0.700



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
11.16 (min)	0.632
13.	0.751
16.	1.93
20.	6.43
20.93 (max)	7.81

RMS %  
 Error  
 >100.0

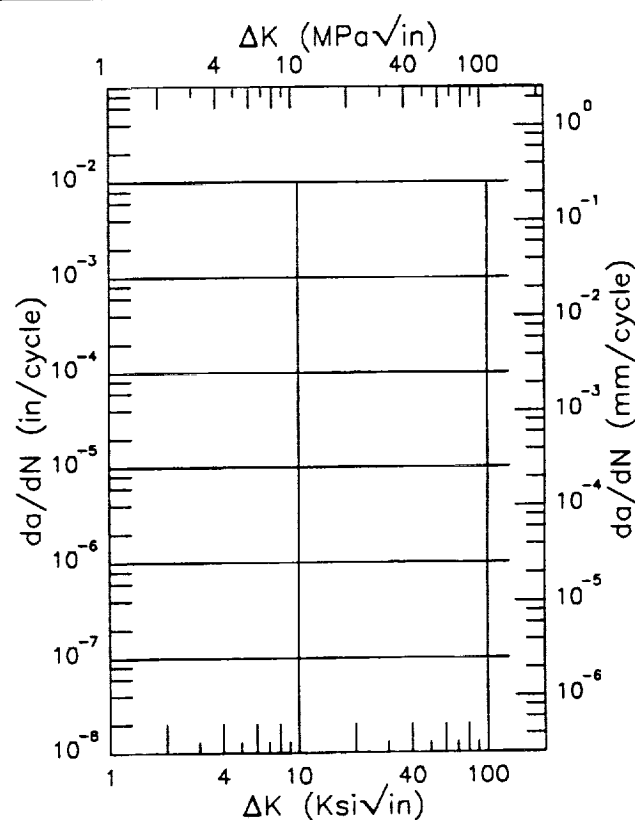
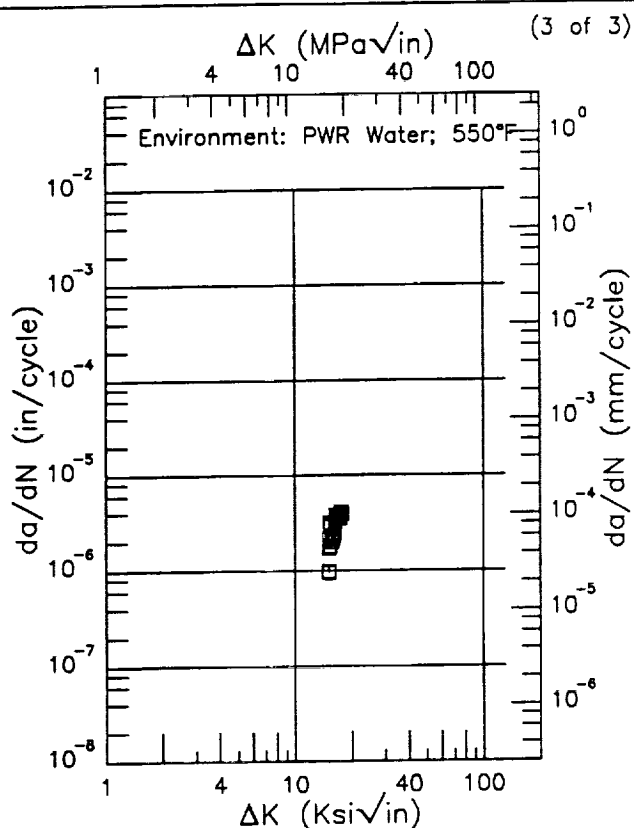
Life Prediction Ratio Summary  
 ☉ Δ □  
 0. .5 .8 1.25 2.---

RMS %  
 Error  
 27.88

Life Prediction Ratio Summary  
 ☉ □  
 0. .5 .8 1.25 2.---

Condition/Ht: STRESS RELIEVED  
 Form: Forging  
 Specimen Type: CT  
 Orientation: T-L  
 Stress Ratio: 0.2  
 Frequency: 1 Hz

Yield Strength: 78. ksi  
 Ult. Strength: 98.6 ksi  
 Specimen Thk: 1 in.  
 Specimen Width: 2 in.  
 Ref: EPCUL

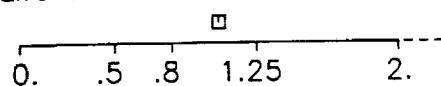


$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
15.10 (min)	2.32
16.	2.53
17.74 (max)	4.34

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)

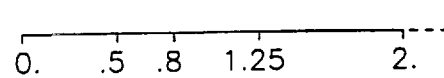
RMS %  
 Error  
 21.52

Life Prediction Ratio Summary



RMS %  
 Error

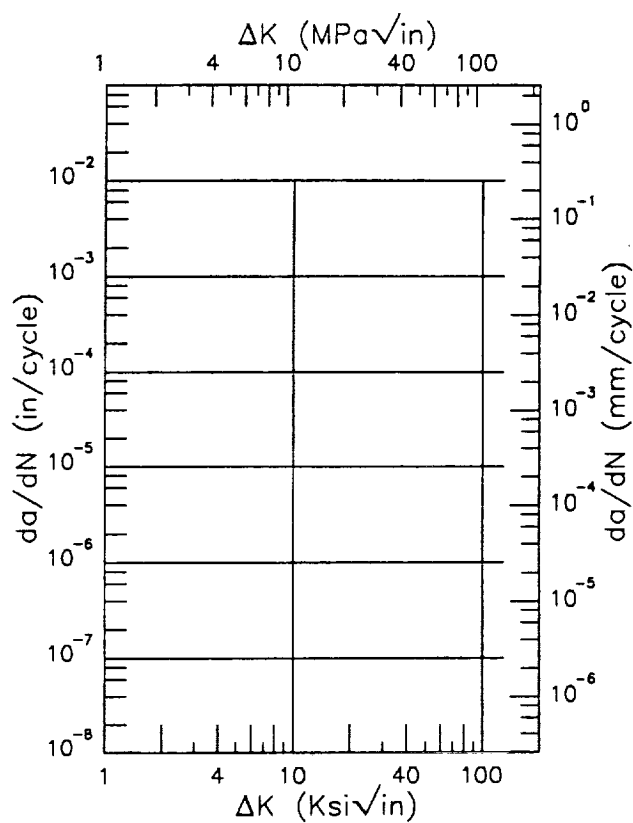
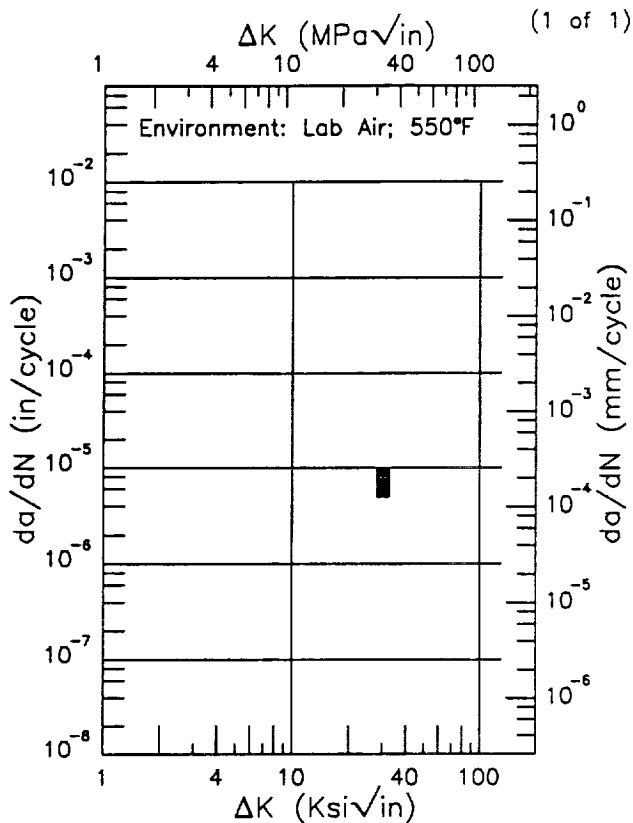
Life Prediction Ratio Summary



E | A508 |

Condition/Ht: -99  
 Form: Forging  
 Specimen Type: CT  
 Orientation: T-L  
 Stress Ratio: 0.1  
 Frequency: 0.1 Hz

Yield Strength: 64. ksi  
 Ult. Strength: 88.8 ksi  
 Specimen Thk: 2 in.  
 Specimen Width: 4 in.  
 Ref: EPBAB



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
30.03 (min)	7.31
30.42 (max)	7.24

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
---------------------	-------------------------------

RMS %  
 Error  
 10.99

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

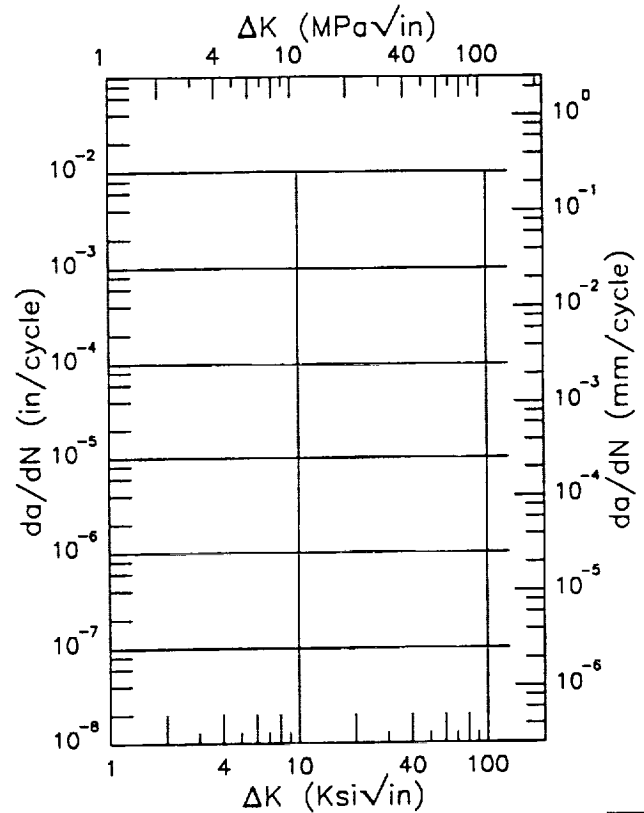
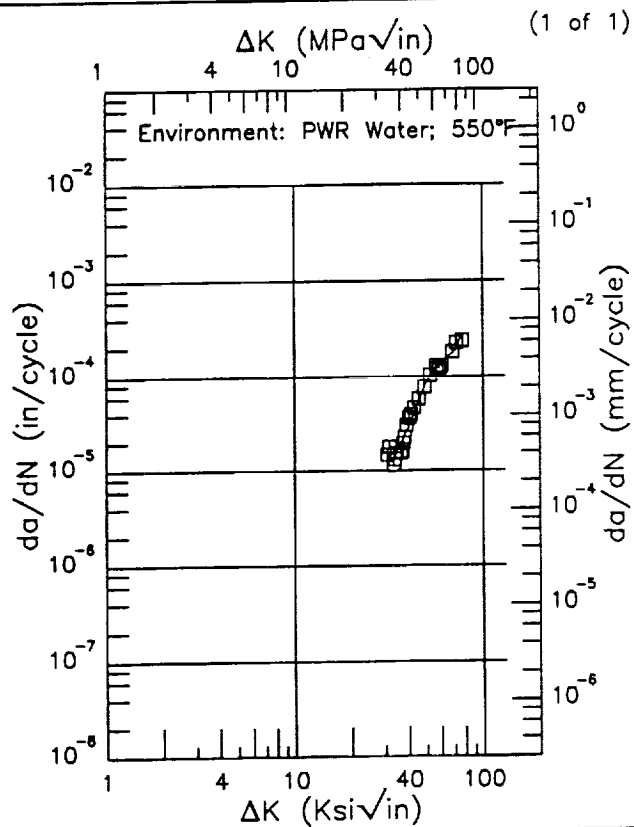
RMS %  
 Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

Condition/Ht: -99  
 Form: Forging  
 Specimen Type: CT  
 Orientation: T-L  
 Stress Ratio: 0.1  
 Frequency: 0. Hz

Yield Strength:  
 Ult. Strength:  
 Specimen Thk: 1 in.  
 Specimen Width: 2 in.  
 Ref: EPCUL



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
30.72 (min)	13.8
35.	16.7
40.	29.3
50.	88.9
60.	142.
70.	183.
77.21 (max)	270.

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
--------------------------------------	-------------------------------

RMS %  
 Error  
 14.80

Life Prediction Ratio Summary  

 0. .5 .8 1.25 2.

RMS %  
 Error

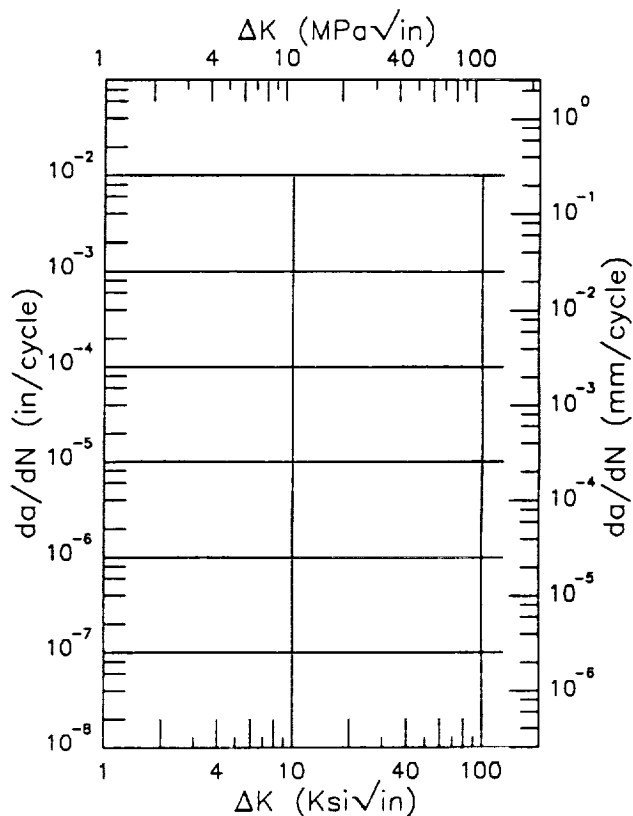
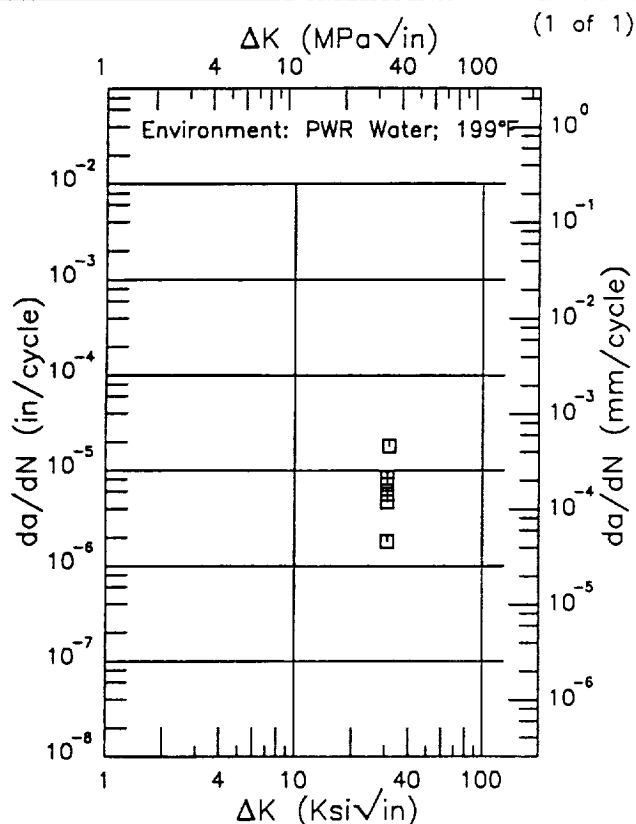
Life Prediction Ratio Summary  

 0. .5 .8 1.25 2.

E | A508 |

Condition/Ht: -99  
 Form: Forging  
 Specimen Type: CT  
 Orientation: T-L  
 Stress Ratio: 0.13  
 Frequency: 0. Hz

Yield Strength:  
 Ult. Strength:  
 Specimen Thk: 1 in.  
 Specimen Width: 2 in.  
 Ref: EPCUL



$\Delta K$  (Ksi√in)       $da/dN$  ( $10^{-6}$  in/cycle)

$\Delta K$  (Ksi√in)       $da/dN$  ( $10^{-6}$  in/cycle)

RMS %  
Error

Life Prediction Ratio Summary

0.   .5   .8   1.25   2. ---

RMS %  
Error

Life Prediction Ratio Summary

0.   .5   .8   1.25   2. ---

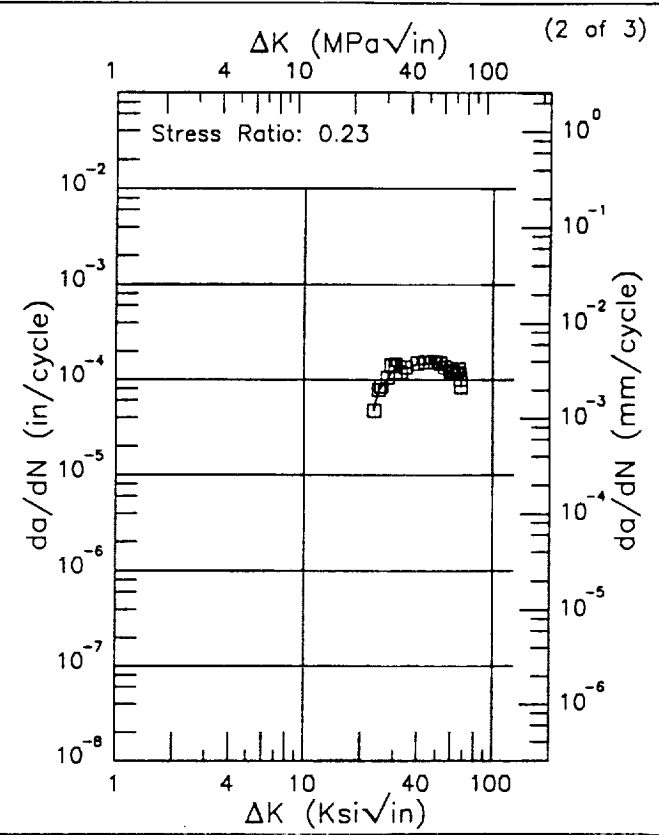
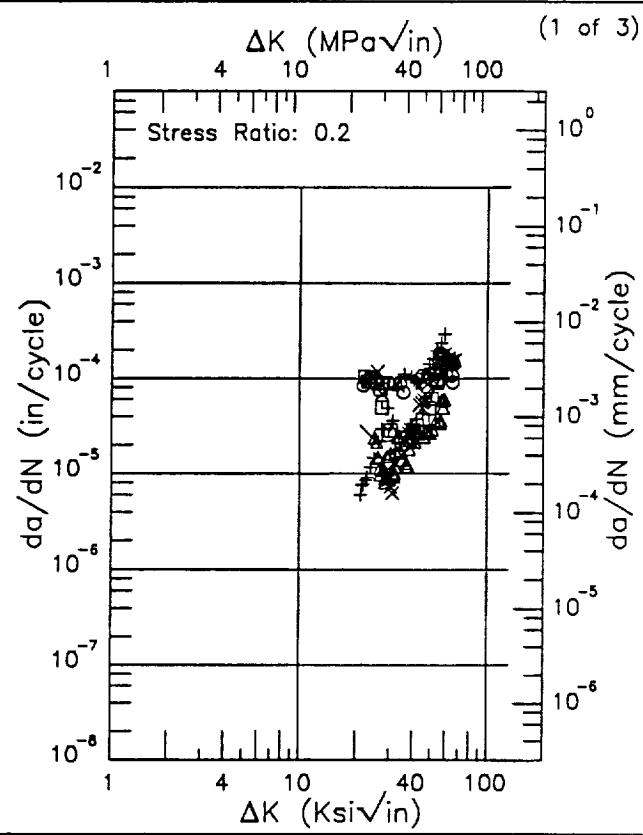
B1-48



R | A508 |

Condition/Ht: -99  
 Form: Forging  
 Specimen Type: CT  
 Orientation:  
 Frequency: 0. Hz  
 Environment: PWR WATER;550°F

Yield Strength: 0.1 ksi  
 Ult. Strength:  
 Specimen Thk: 2 in.  
 Specimen Width: 4 in.  
 Ref: EPWEO



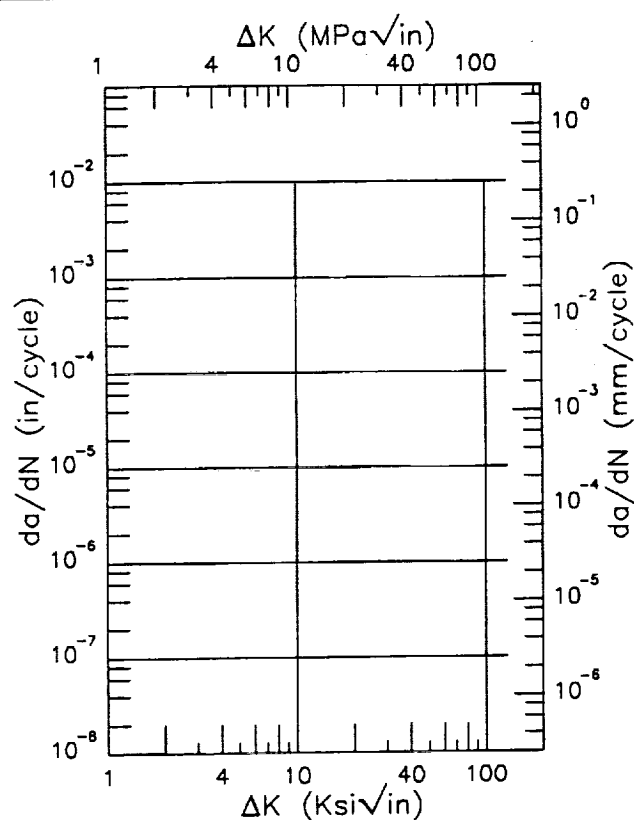
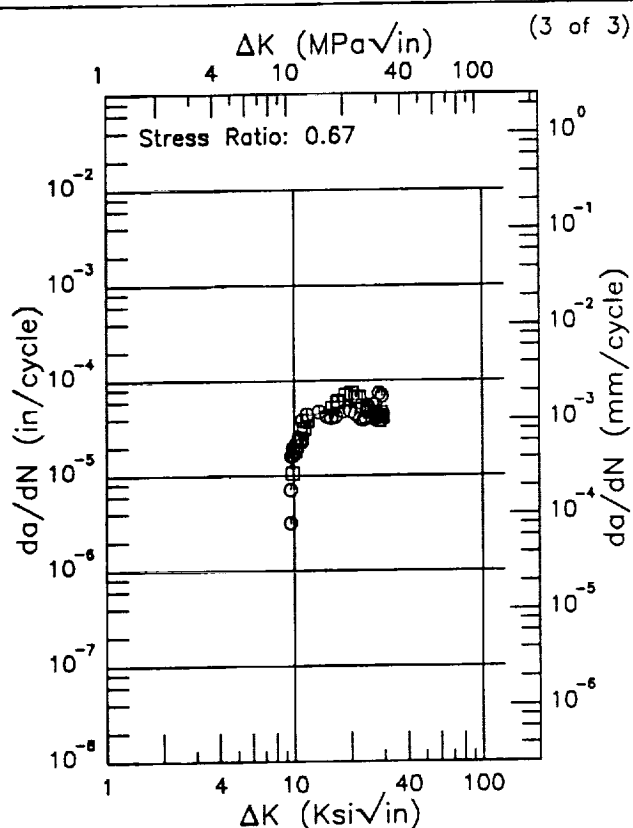
$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
20.89 (min)	32.4
25.	22.4
30.	21.9
35.	26.7
40.	35.7
50.	68.2
60.	124.
66.39 (max)	171.

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
23.39 (min)	48.3
25.	77.7
30.	127.
35.	132.
40.	146.
50.	150.
60.	123.
67.52 (max)	112.

RMS % Error >100.0	Life Prediction Ratio Summary +      o	RMS % Error 8.79	Life Prediction Ratio Summary □
	0. .5 .8 1.25 2.		0. .5 .8 1.25 2.

Condition/Ht: -99  
 Form: Forging  
 Specimen Type: CT  
 Orientation:  
 Frequency: 0. Hz  
 Environment: PWR WATER;550°F

Yield Strength: 0.1 ksi  
 Ult. Strength:  
 Specimen Thk: 2 in.  
 Specimen Width: 4 in.  
 Ref: EPWEO

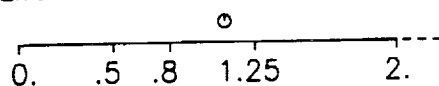


$\Delta K$ (Ksi√in)		$da/dN$ ( $10^{-6}$ in/cycle)
9.52 (min)	○	12.1
10.		17.8
13.		44.4
16.		48.5
20.		56.2
25.		45.5
29.31 (max)		56.9

$\Delta K$  (Ksi√in)       $da/dN$  ( $10^{-6}$  in/cycle)

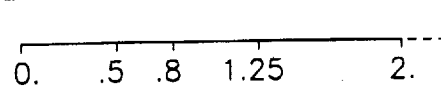
RMS %  
 Error  
 28.11

Life Prediction Ratio Summary



RMS %  
 Error

Life Prediction Ratio Summary

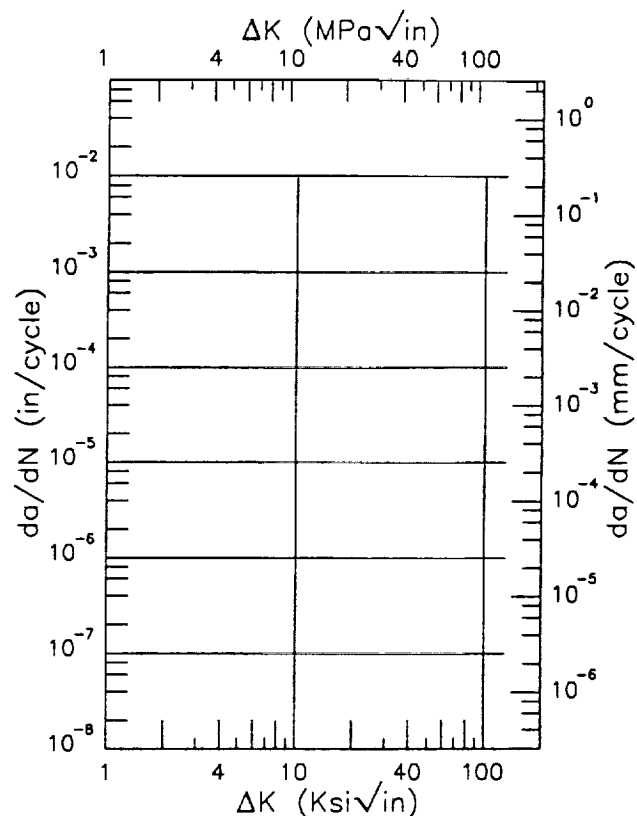
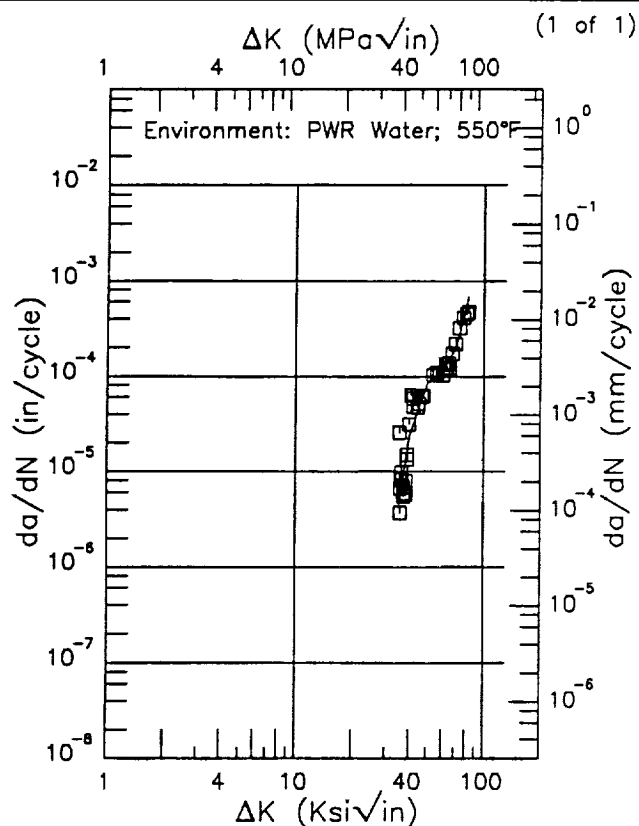


E

A508

Condition/Ht: -99  
 Form: Forging  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.2  
 Frequency: 0. Hz

Yield Strength: 0.1 ksi  
 Ult. Strength:  
 Specimen Thk: 2 in.  
 Specimen Width: 4 in.  
 Ref: EPWEO



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
35.51 (min)	4.60
40.	23.1
50.	84.9
60.	119.
70.	191.
80.	514.
82.11 (max)	686.

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
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RMS %  
 Error  
 86.42

Life Prediction Ratio Summary

0. .5 .8 1.25 2.---

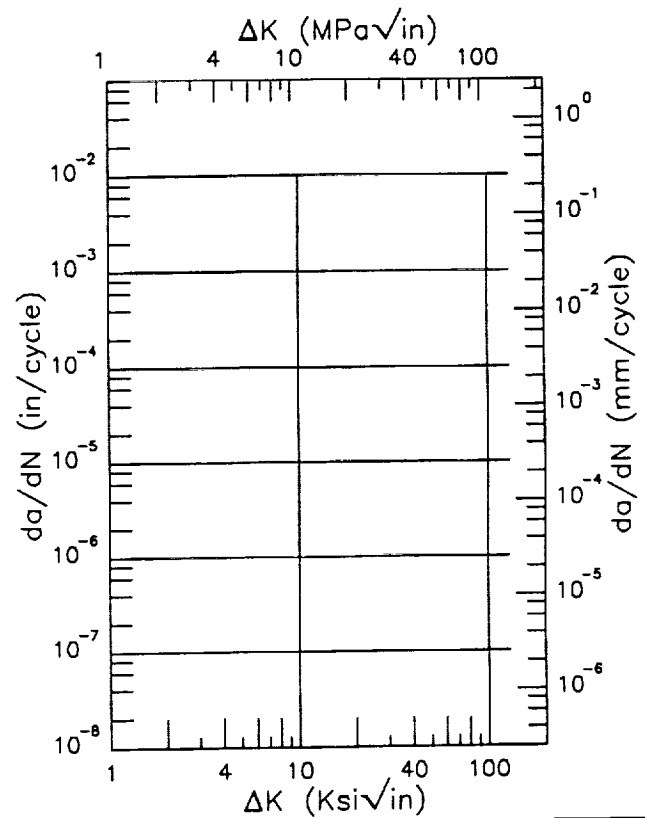
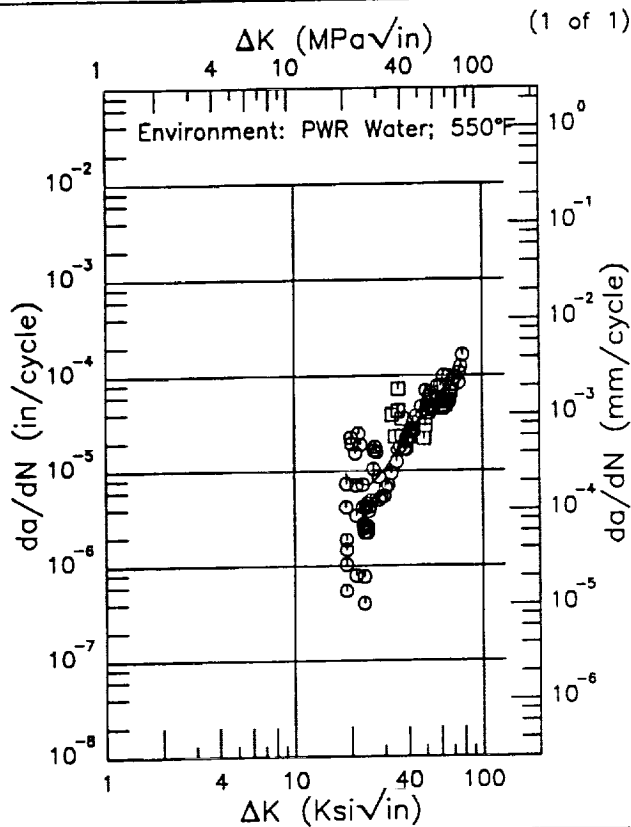
RMS %  
 Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.---

Condition/Ht: -99  
 Form: Forging  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.2  
 Frequency: 0. Hz

Yield Strength: 0.1 ksi  
 Ult. Strength:  
 Specimen Thk: 4 in.  
 Specimen Width: 8 in.  
 Ref: EPWEO

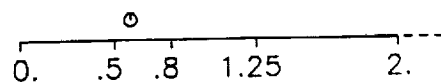


$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
18.66 (min)	9.34
20.	7.72
25.	7.15
30.	10.3
35.	16.4
40.	25.1
50.	44.1
60.	58.1
70.	83.0
78.00 (max)	130.

$\Delta K$  (Ksi $\sqrt{\text{in}}$ )       $da/dN$  ( $10^{-6}$  in/cycle)

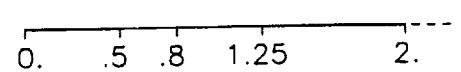
RMS %  
 Error  
 70.33

Life Prediction Ratio Summary



RMS %  
 Error

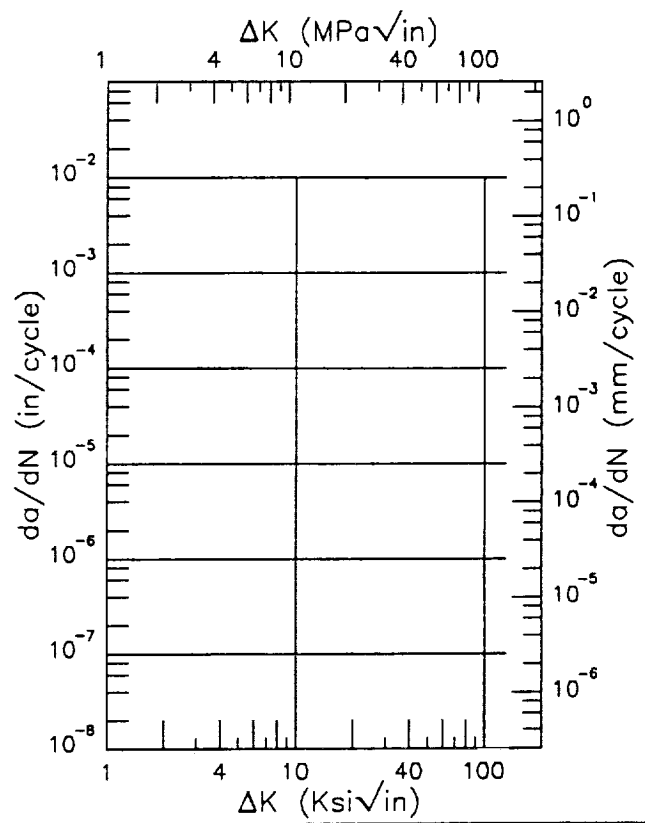
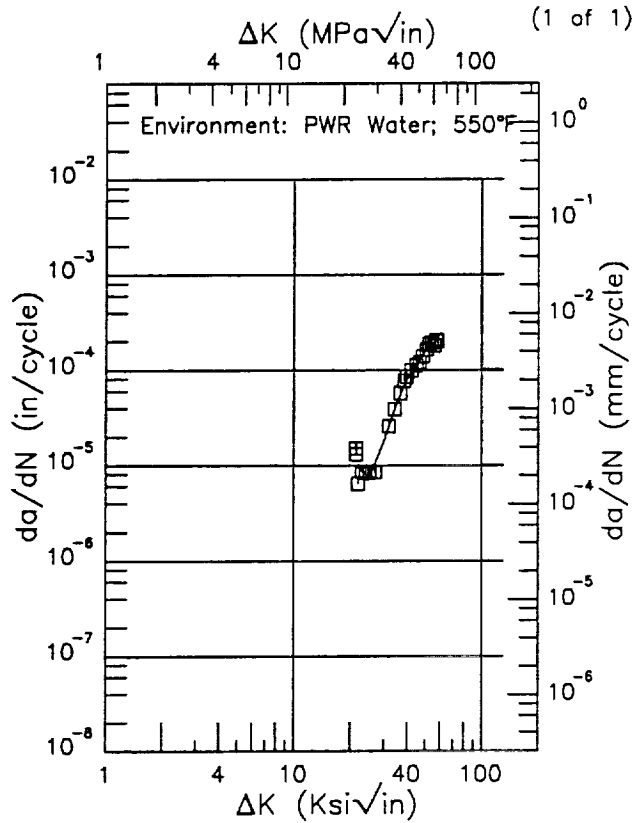
Life Prediction Ratio Summary



E | A508 |

Condition/Ht: -99  
 Form: Forging  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.22  
 Frequency: 0. Hz

Yield Strength: 0.1 ksi  
 Ult. Strength:  
 Specimen Thk: 2 in.  
 Specimen Width: 4 in.  
 Ref: EPWEO



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
21.24 (min)	9.96
25.	7.58
30.	17.9
35.	45.1
40.	82.3
50.	155.
57.75 (max)	207.

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
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RMS %  
 Error  
 16.02

Life Prediction Ratio Summary

0. .5 .8 1.25 2.-----

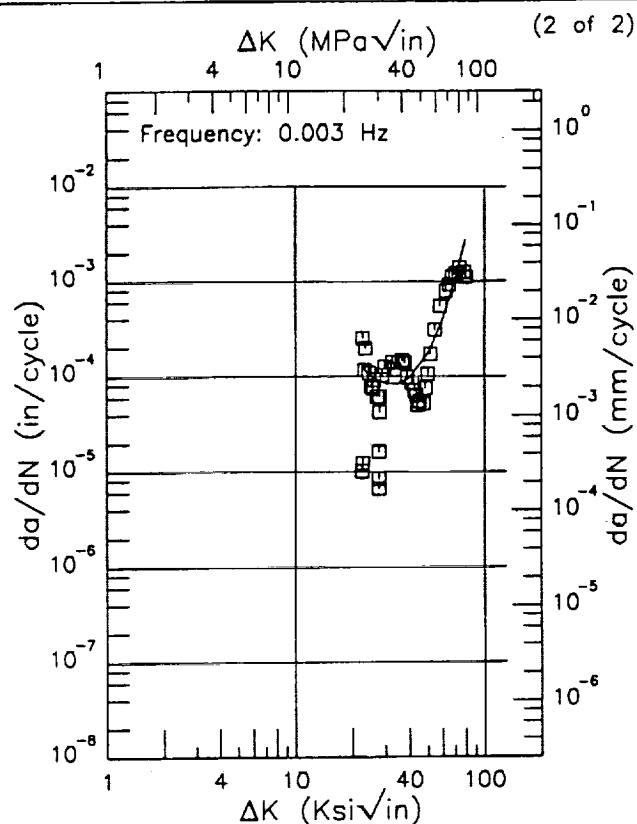
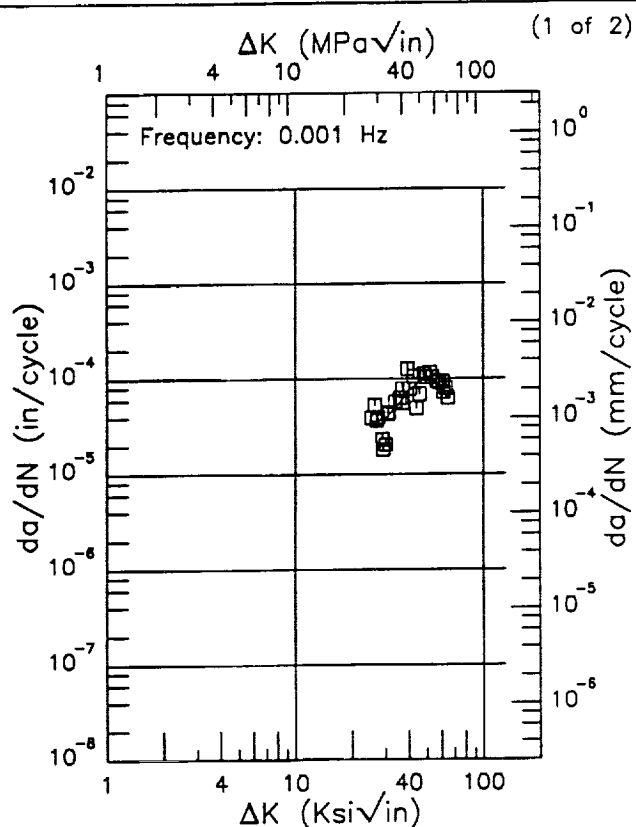
RMS %  
 Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.-----

Condition/Ht: -99  
 Form: Forging  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.21  
 Environment: PWR WATER;550°F

Yield Strength: 0.1 ksi  
 Ult. Strength:  
 Specimen Thk: 2 in.  
 Specimen Width: 4 in.  
 Ref: EPWEO



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
25.22 (min)	35.4
30.	38.3
35.	53.2
40.	74.6
50.	105.
60.	82.7
64.31 (max)	62.2

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
22.42 (min)	126.
25.	102.
30.	84.1
35.	84.5
40.	97.8
50.	174.
60.	396.
70.	1039.
79.14 (max)	2713.

RMS %  
 Error  
 26.24

Life Prediction Ratio Summary  

 0. .5 .8 1.25 2.

RMS %  
 Error  
 52.73

Life Prediction Ratio Summary  

 0. .5 .8 1.25 2.

F | A508 |

Condition/Ht: -99

Form: Forging

Specimen Type: CT

Orientation:

Stress Ratio: 0.7

Environment: PWR WATER;550°F

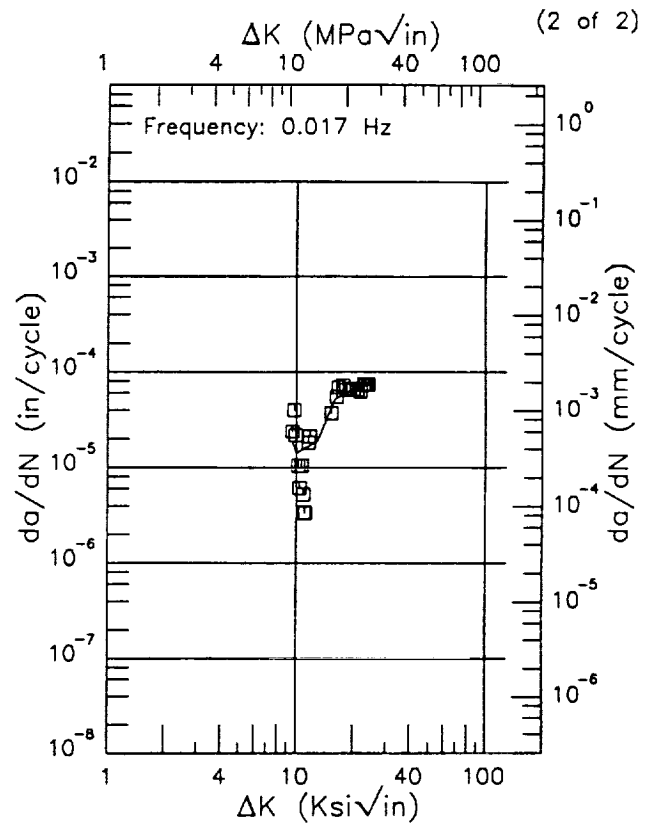
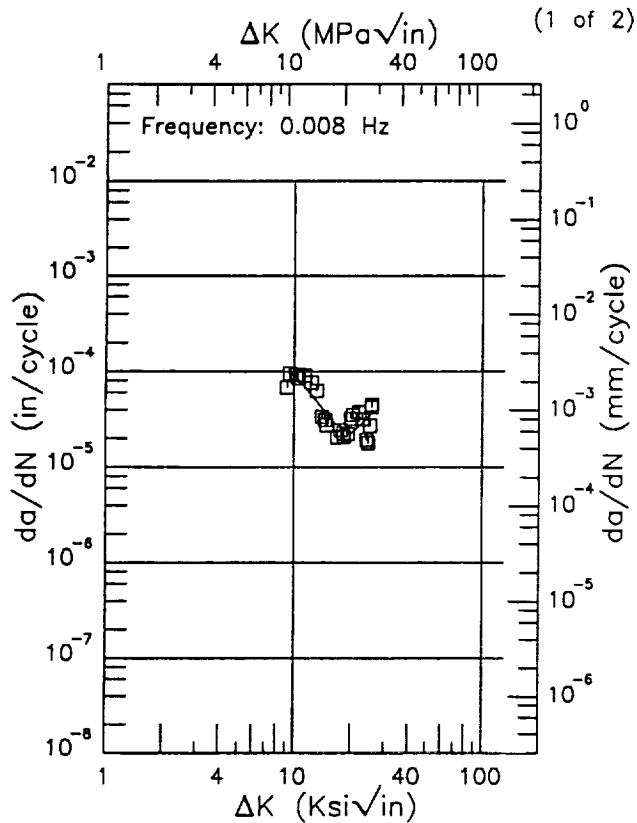
Yield Strength: 0.1 ksi

Ult. Strength:

Specimen Thk: 2 in.

Specimen Width: 4 in.

Ref: EPWEO



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
9.08 (min)	100.
10.	92.9
13.	51.4
16.	29.8
20.	22.6
25.	34.3
25.80 (max)	39.3

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
9.54 (min)	18.9
10.	14.3
13.	19.1
16.	51.5
20.	65.6
23.91 (max)	77.5

RMS %  
Error  
26.05

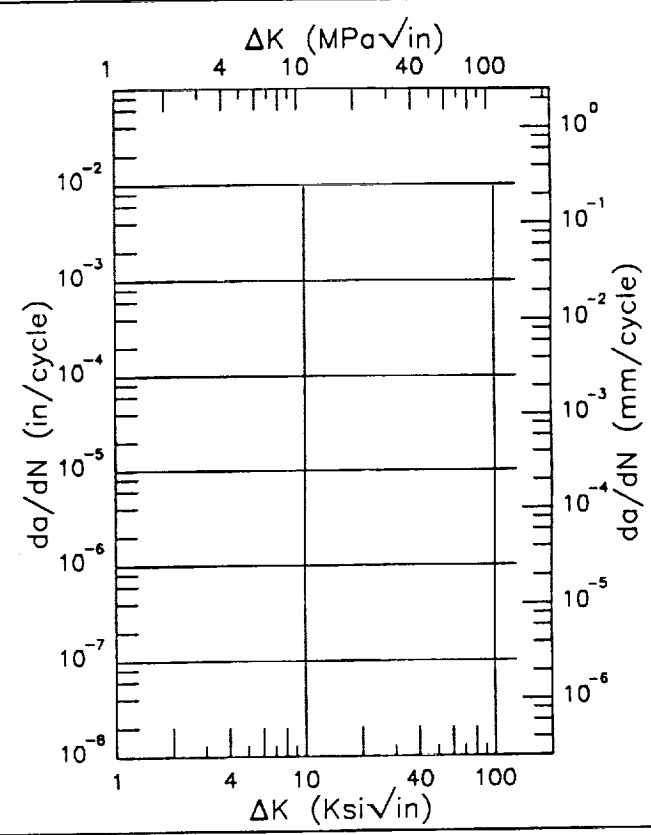
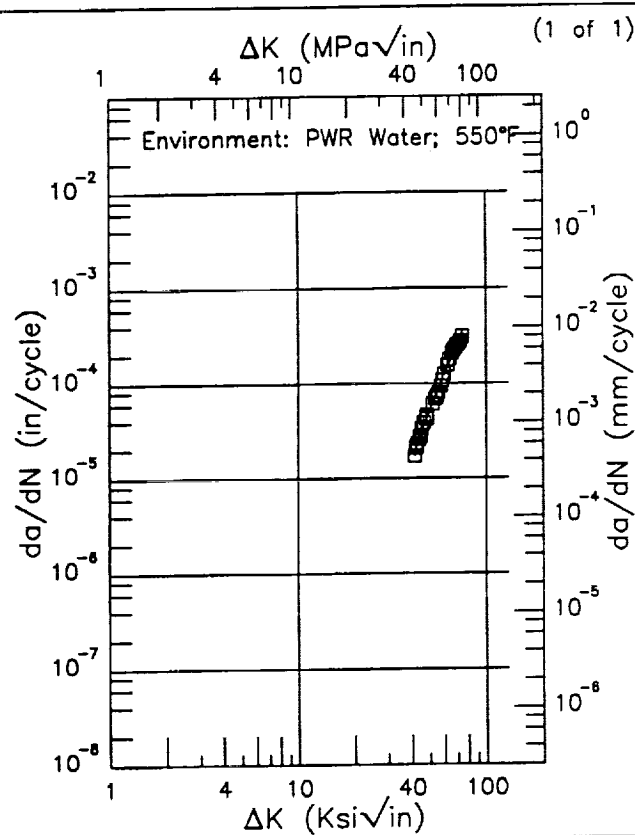
Life Prediction Ratio Summary  
0. .5 .8 1.25 2.---

RMS %  
Error  
44.49

Life Prediction Ratio Summary  
0. .5 .8 1.25 2.---

Condition/Ht: -99  
 Form: Forging  
 Specimen Type: CT  
 Orientation: T-L  
 Stress Ratio: 0.2  
 Frequency: 0. Hz

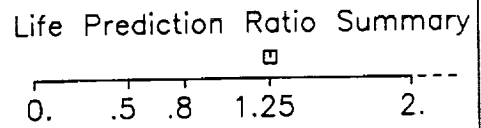
Yield Strength: 67. ksi  
 Ult. Strength: 87.9 ksi  
 Specimen Thk: 2 in.  
 Specimen Width: 5.1 in.  
 Ref: EPJNM



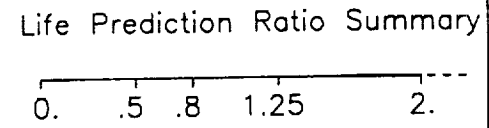
$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
41.59 (min)	19.8
50.	50.8
60.	129.
70.	257.
74.33 (max)	321.

$\Delta K$  (Ksi $\sqrt{\text{in}}$ )       $da/dN$  ( $10^{-6}$  in/cycle)

RMS %  
 Error  
 6.01



RMS %  
 Error

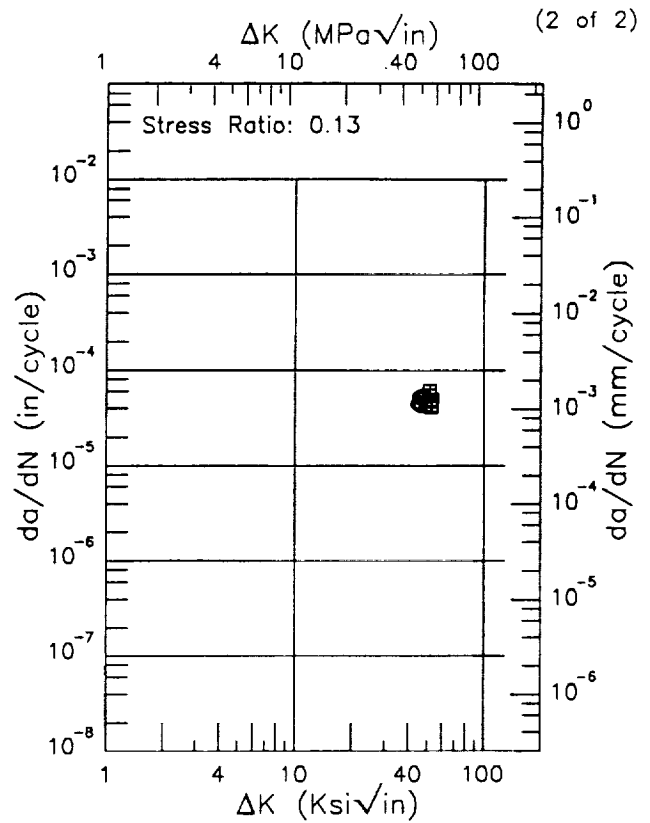
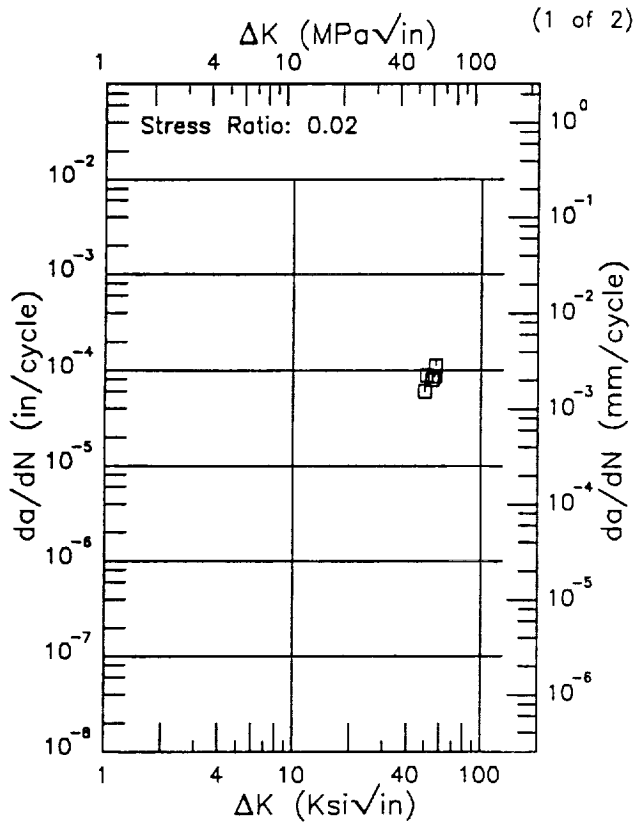




R | A508 |

Condition/Ht: -99  
 Form: Forging  
 Specimen Type: CT  
 Orientation:  
 Frequency: 0. Hz  
 Environment: PWR WATER;550°F

Yield Strength: 0.1 ksi  
 Ult. Strength:  
 Specimen Thk: 2 in.  
 Specimen Width: 5.11 in.  
 Ref: EPWEO



ΔK (Ksi√in)      da/dN (10<sup>-6</sup>in/cycle)

ΔK (Ksi√in)      da/dN (10<sup>-6</sup>in/cycle)

44.15 (min)	46.9
50.	50.9
53.17 (max)	44.6

RMS %  
Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.---

RMS %  
Error

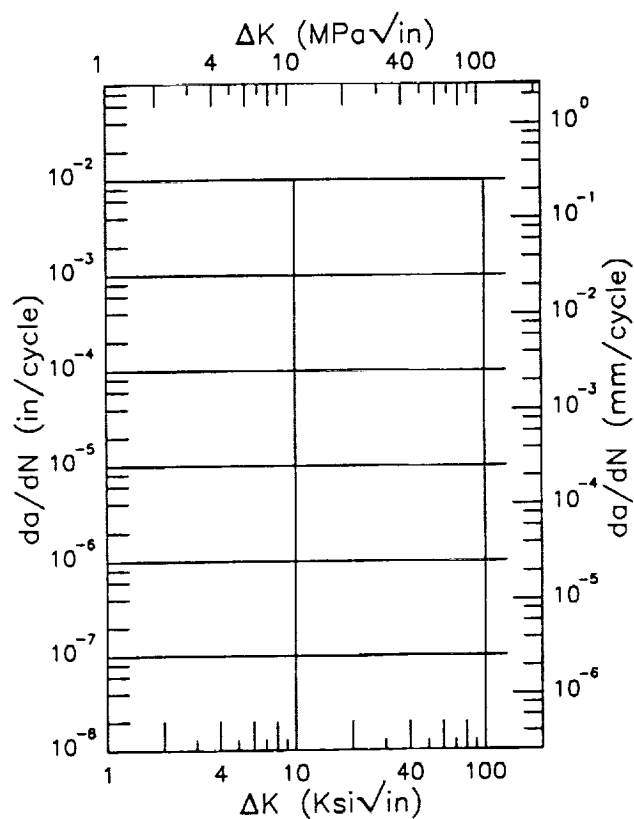
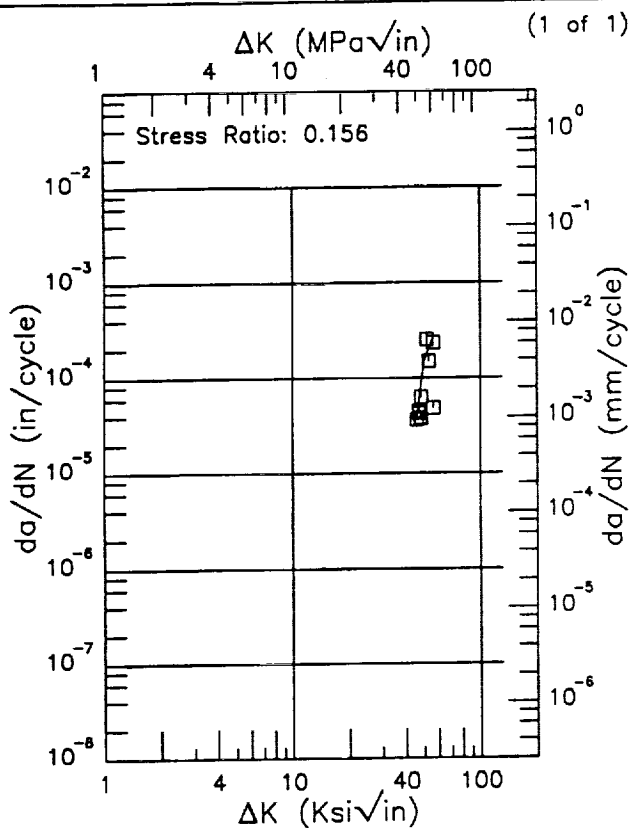
9.96

Life Prediction Ratio Summary

0. .5 .8 1.25 2.---

Condition/Ht: -99  
 Form: Forging  
 Specimen Type: CT  
 Orientation:  
 Frequency: 0. Hz  
 Environment: PWR WATER;550°F

Yield Strength: 0.1 ksi  
 Ult. Strength:  
 Specimen Thk: 2 in.  
 Specimen Width: 5.11 in.  
 Ref: EPWEO



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
45.67 (min)	37.7
50.	147.
55.90 (max)	258.

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
---------------------	-------------------------------

RMS %  
 Error  
 39.56

Life Prediction Ratio Summary

□

0. .5 .8 1.25 2.

RMS %  
 Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

R | A508 |

Condition/Ht: -99

Form: Forging

Specimen Type: CT

Orientation:

Frequency: 0. Hz

Environment: PWR WATER;550°F

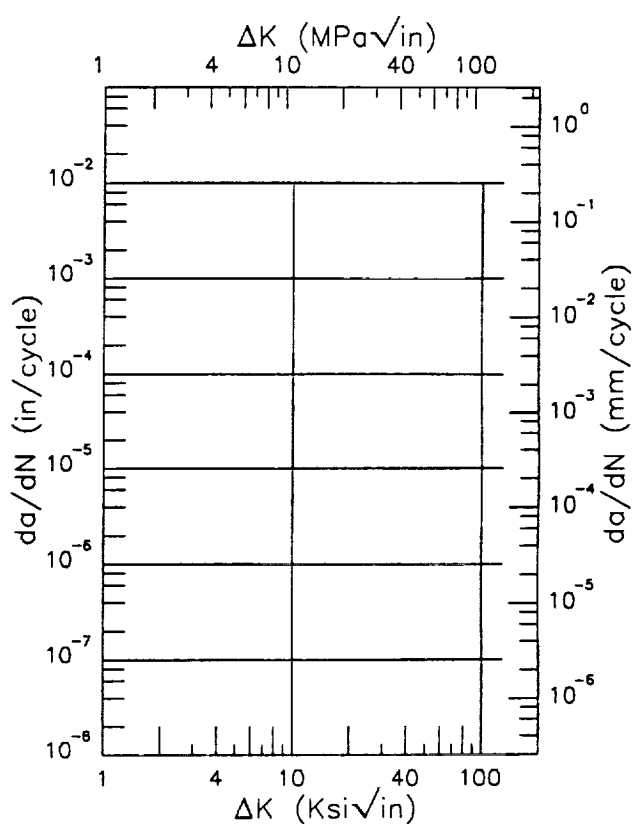
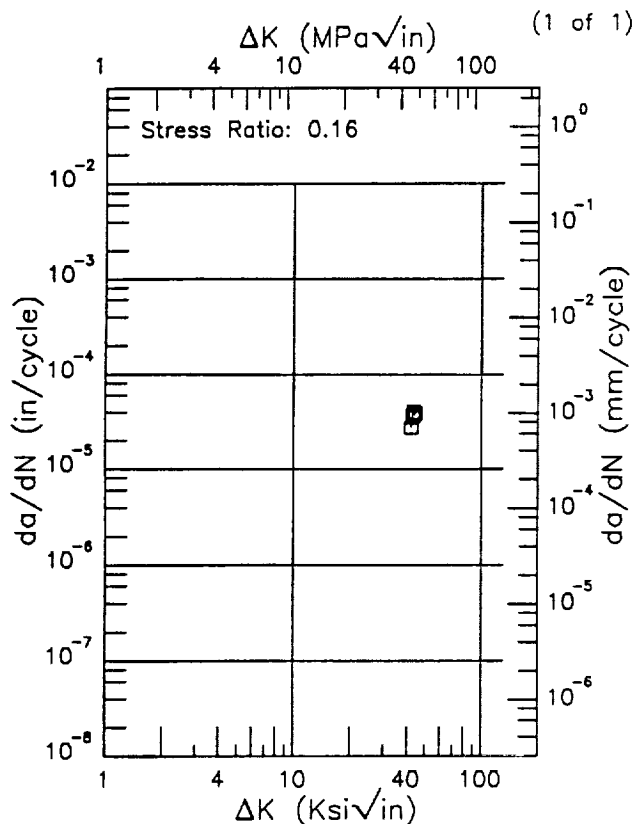
Yield Strength: 0.1 ksi

Ult. Strength:

Specimen Thk: 2 in.

Specimen Width: 5.11 in.

Ref: EPWE0



ΔK (Ksi√in)      da/dN (10<sup>-6</sup>in/cycle)

ΔK (Ksi√in)      da/dN (10<sup>-6</sup>in/cycle)

RMS %  
Error

Life Prediction Ratio Summary

0.    .5    .8    1.25    2. ---

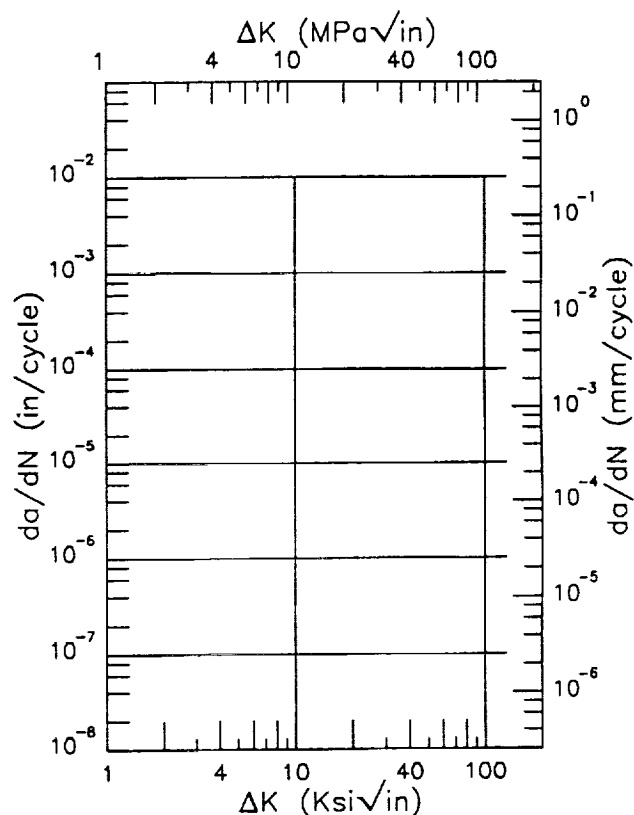
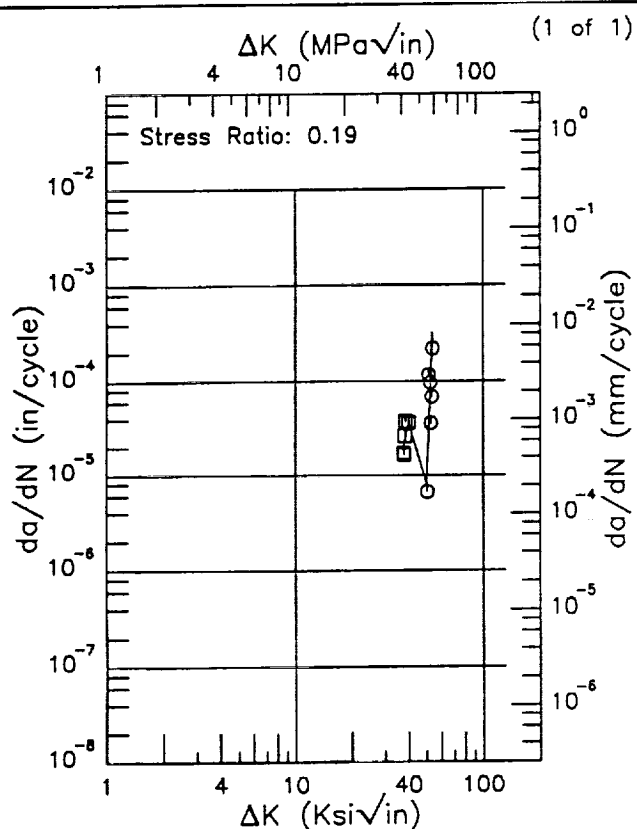
RMS %  
Error

Life Prediction Ratio Summary

0.    .5    .8    1.25    2. ---

Condition/Ht: -99  
 Form: Forging  
 Specimen Type: CT  
 Orientation:  
 Frequency: 0. Hz  
 Environment: PWR WATER;550°F

Yield Strength: 0.1 ksi  
 Ult. Strength:  
 Specimen Thk: 2 in.  
 Specimen Width: 5.11 in.  
 Ref: EPWEO



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
37.36 (min)	19.5
40.	36.1
50.	8.10
53.53 (max)	323.

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
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RMS %  
 Error  
 >100.0

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS %  
 Error

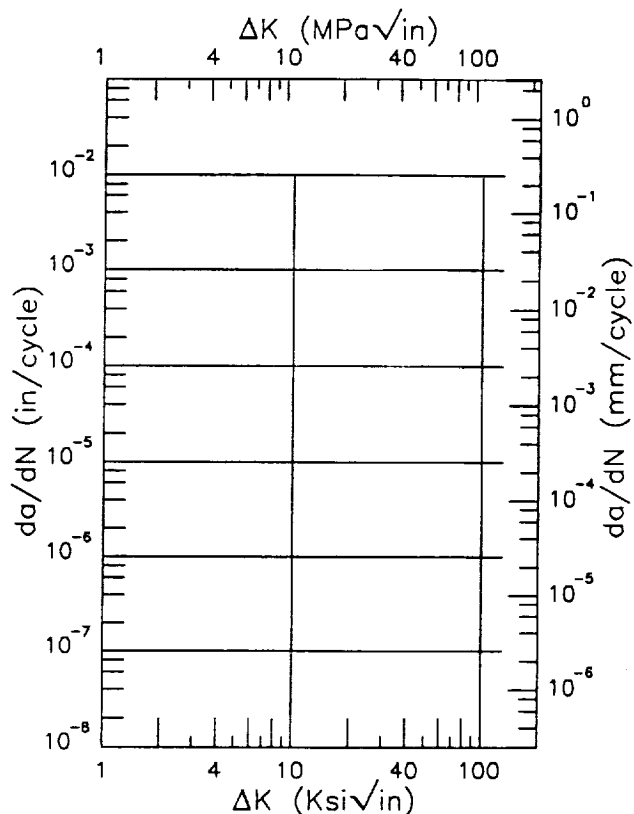
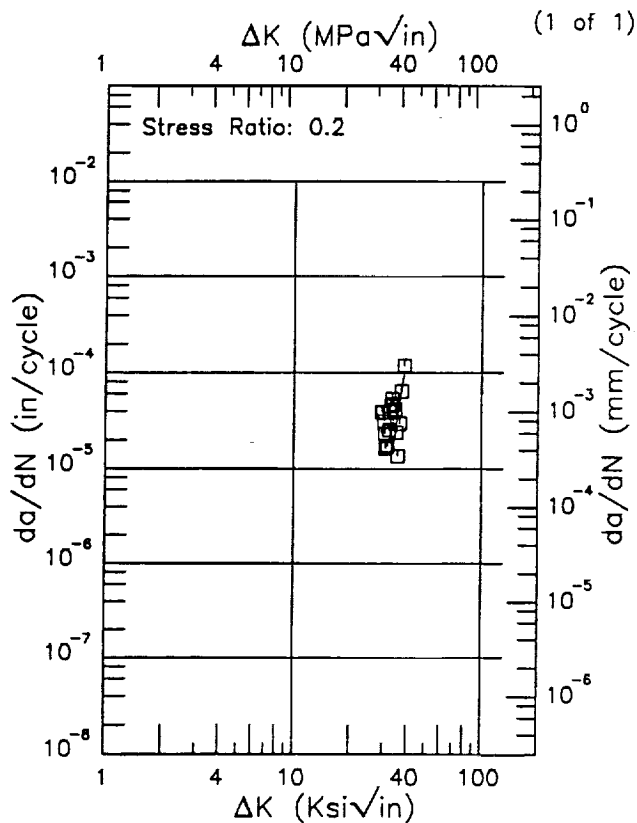
Life Prediction Ratio Summary

0. .5 .8 1.25 2.

R A508

Condition/Ht: -99  
 Form: Forging  
 Specimen Type: CT  
 Orientation:  
 Frequency: 0. Hz  
 Environment: PWR WATER;550°F

Yield Strength: 0.1 ksi  
 Ult. Strength:  
 Specimen Thk: 1.984 in.  
 Specimen Width: 5.11 in.  
 Ref: EPWEO

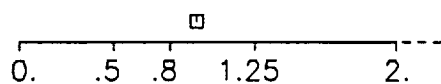


$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
29.15 (min)	24.7
30.	29.0
35.	29.5
38.45 (max)	103.

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
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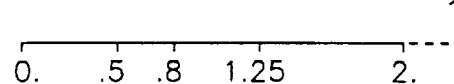
RMS %  
 Error  
 42.63

Life Prediction Ratio Summary



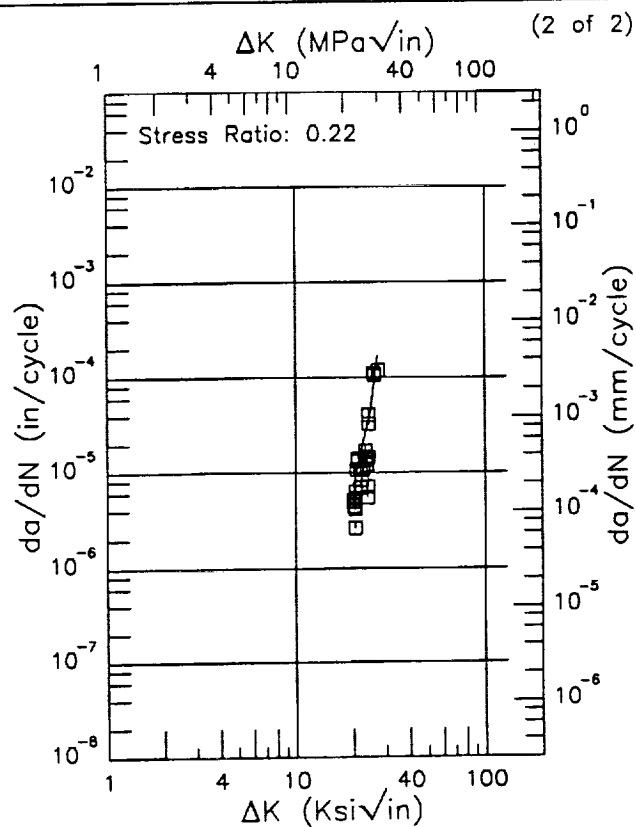
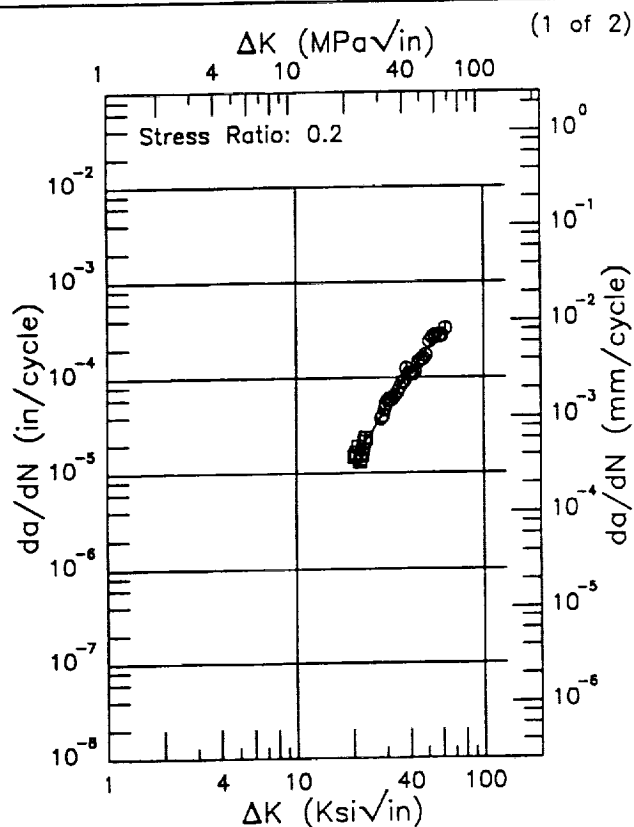
RMS %  
 Error

Life Prediction Ratio Summary



Condition/Ht: -99  
 Form: Forging  
 Specimen Type: CT  
 Orientation:  
 Frequency: 0. Hz  
 Environment: PWR WATER;550°F

Yield Strength: 0.1 ksi  
 Ult. Strength:  
 Specimen Thk: 2 in.  
 Specimen Width: 5.11 in.  
 Ref: EPWE0

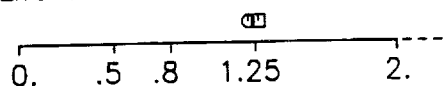


ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
20.18 (min)	14.3
25.	26.8
30.	49.7
35.	76.7
40.	107.
50.	199.
60.	297.
61.89 (max)	293.

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
20.09 (min)	7.08
25.	46.3
27.27 (max)	168.

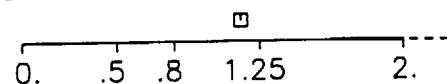
RMS %  
 Error  
 10.59

Life Prediction Ratio Summary



RMS %  
 Error  
 45.30

Life Prediction Ratio Summary



R | A508 |

Condition/Ht: -99

Form: Forging

Specimen Type: CT

Orientation:

Frequency: 0. Hz

Environment: PWR WATER;550°F

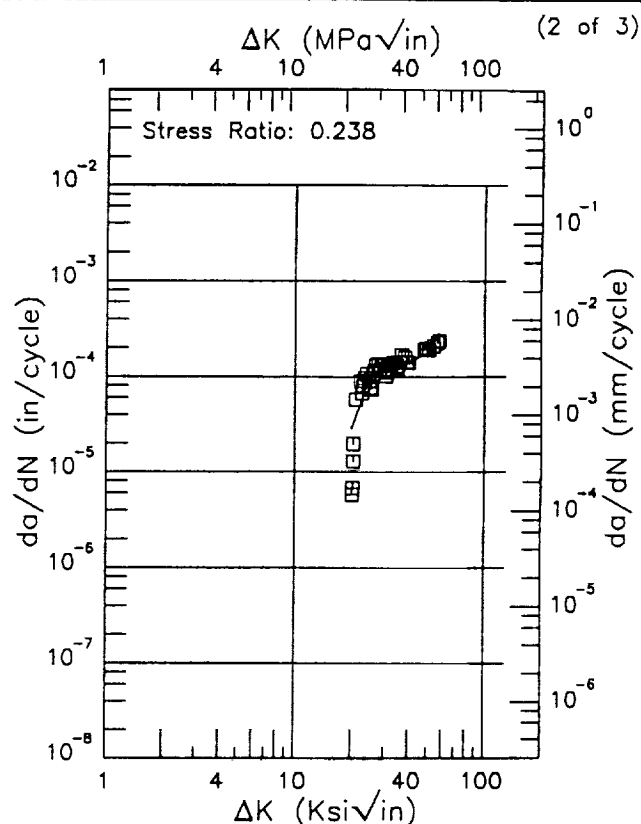
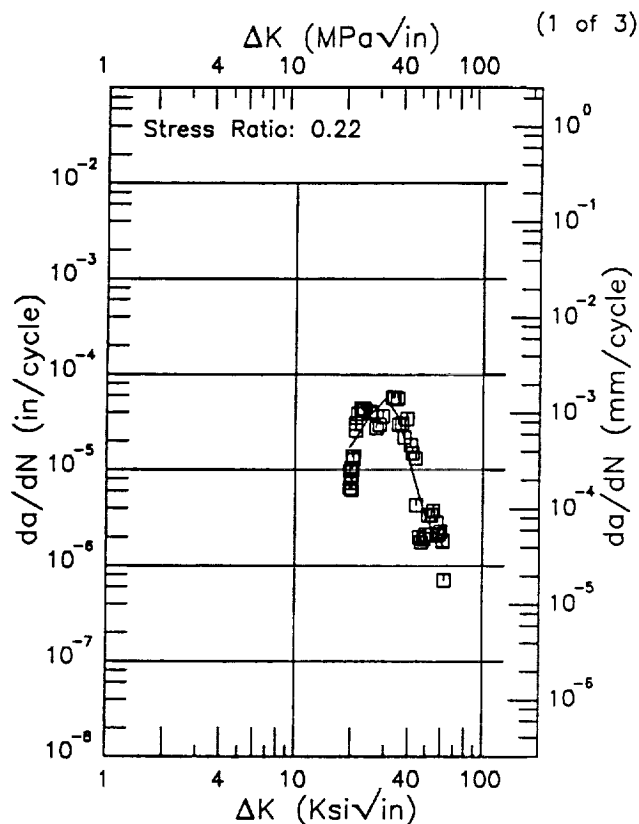
Yield Strength: 0.1 ksi

Ult. Strength:

Specimen Thk: 2 in.

Specimen Width: 5.11 in.

Ref: EPWEO



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
19.30 (min)	17.3
20.	18.3
25.	38.0
30.	55.9
35.	36.3
40.	13.4
50.	3.06
60.	1.82
62.08 (max)	1.54

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
20.10 (min)	28.4
25.	97.0
30.	138.
35.	144.
40.	143.
50.	178.
57.49 (max)	287.

RMS %  
Error  
45.36

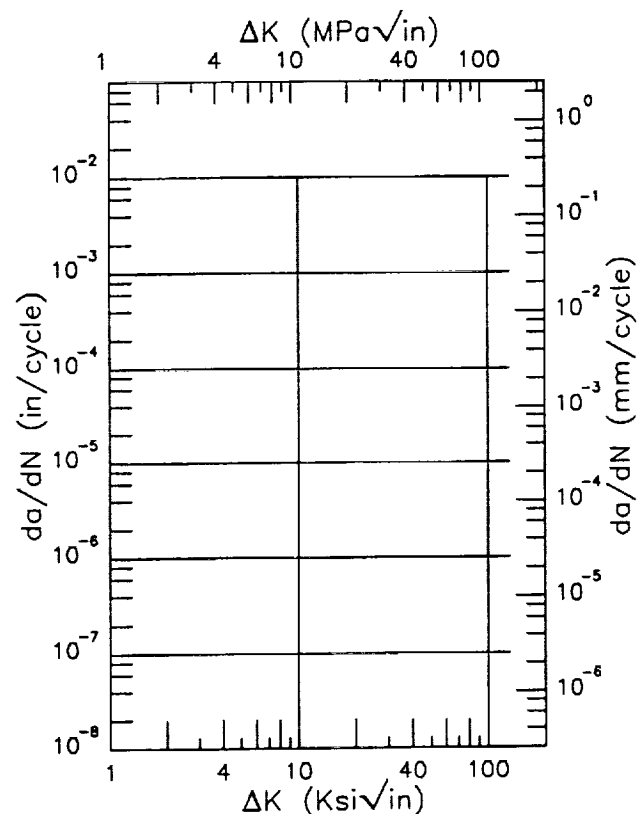
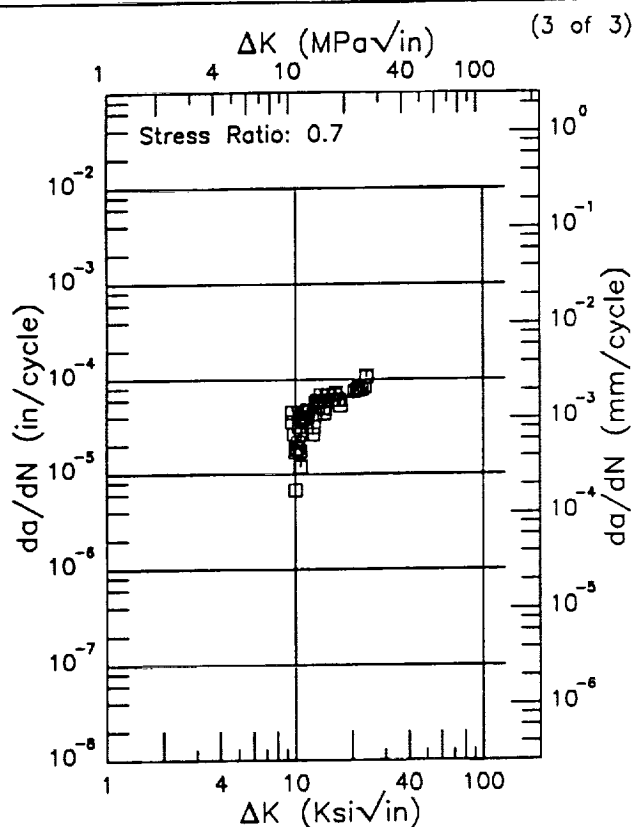
Life Prediction Ratio Summary  
□  
0. .5 .8 1.25 2.---

RMS %  
Error  
30.77

Life Prediction Ratio Summary  
0. .5 .8 1.25 2.---

Condition/Ht: -99  
 Form: Forging  
 Specimen Type: CT  
 Orientation:  
 Frequency: 0. Hz  
 Environment: PWR WATER;550°F

Yield Strength: 0.1 ksi  
 Ult. Strength:  
 Specimen Thk: 2 in.  
 Specimen Width: 5.11 in.  
 Ref: EPWEO

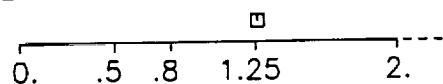


$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
9.52 (min)	19.8
10.	24.0
13.	48.1
16.	60.9
20.	68.5
23.78 (max)	101.

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
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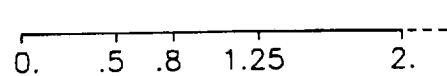
RMS %  
 Error  
 32.38

Life Prediction Ratio Summary



RMS %  
 Error

Life Prediction Ratio Summary

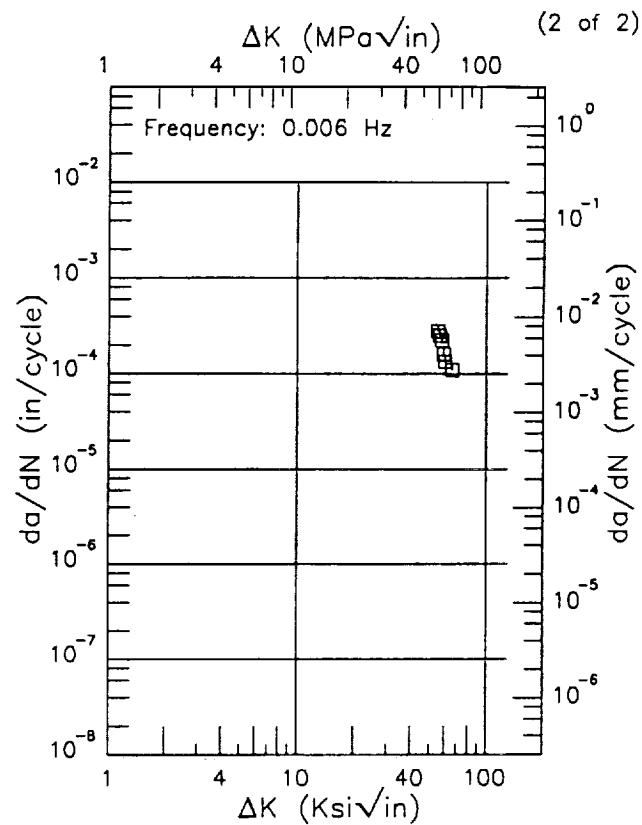
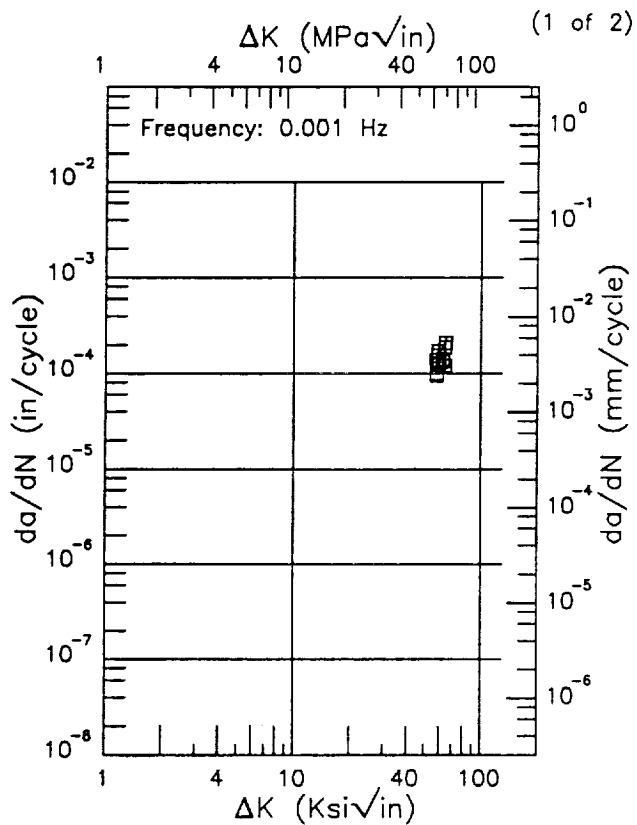




F | A508 |

Condition/Ht: -99  
 Form: Forging  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.02  
 Environment: PWR WATER;550°F

Yield Strength: 0.1 ksi  
 Ult. Strength:  
 Specimen Thk: 1.984 - 2 in.  
 Specimen Width: 5.11 in.  
 Ref: EPWEO



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
57.18 (min)	118.
60.	165.
64.43 (max)	211.

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)

RMS %  
 Error  
 20.86

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

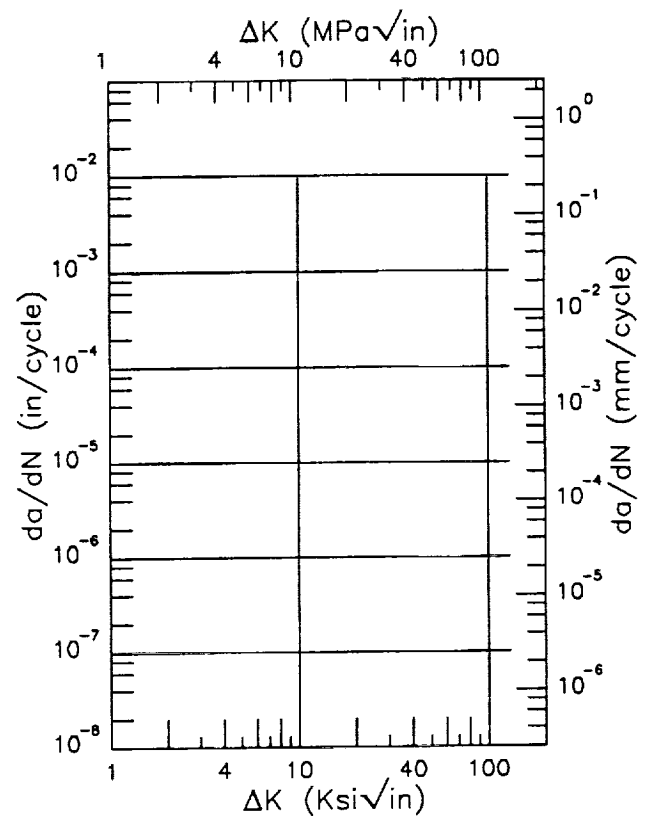
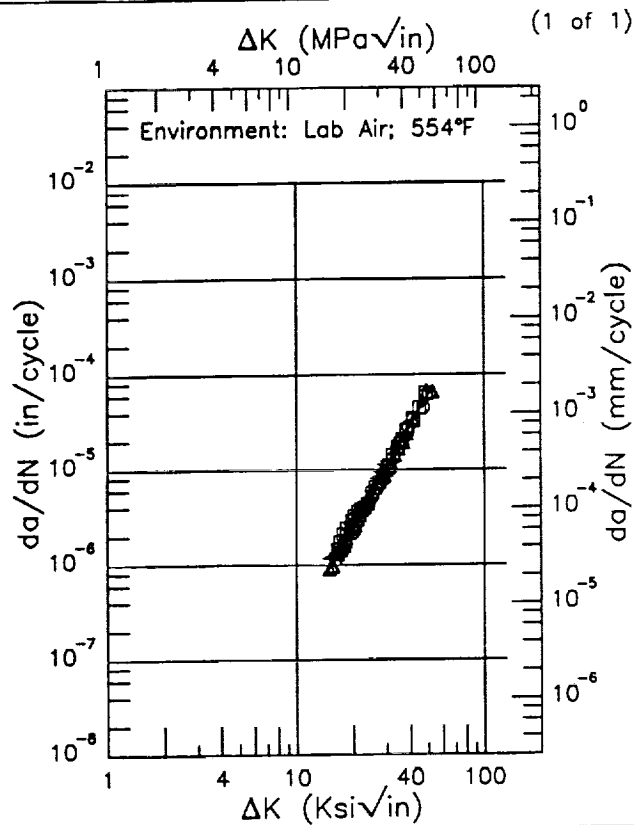
RMS %  
 Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

Condition/Ht: -99  
 Form: Weldment  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.1  
 Frequency: 10 Hz

Yield Strength: 51.1 - 73.8 ksi  
 Ult. Strength: 88.6 ksi  
 Specimen Thk: 0.984 in.  
 Specimen Width: 1.969 in.  
 Ref: EPBER

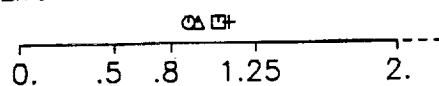


$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
14.78 (min)	0.957
16.	1.25
20.	2.71
25.	5.73
30.	10.2
35.	17.3
40.	28.5
50.	62.6
52.78 (max)	66.0

$\Delta K$  (Ksi $\sqrt{\text{in}}$ )      da/dN (10<sup>-6</sup> in/cycle)

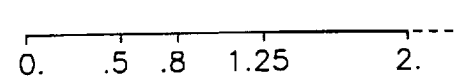
RMS %  
 Error  
 10.16

Life Prediction Ratio Summary



RMS %  
 Error

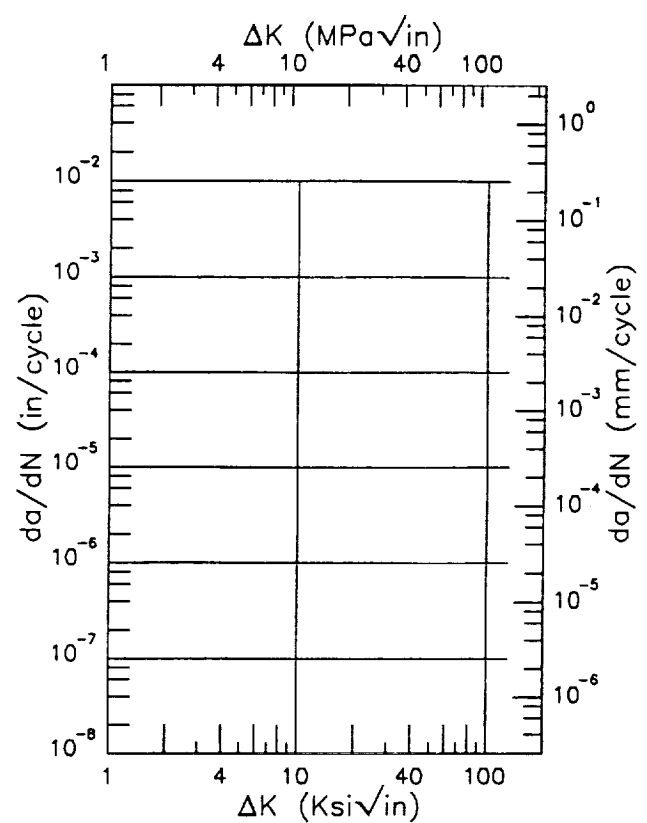
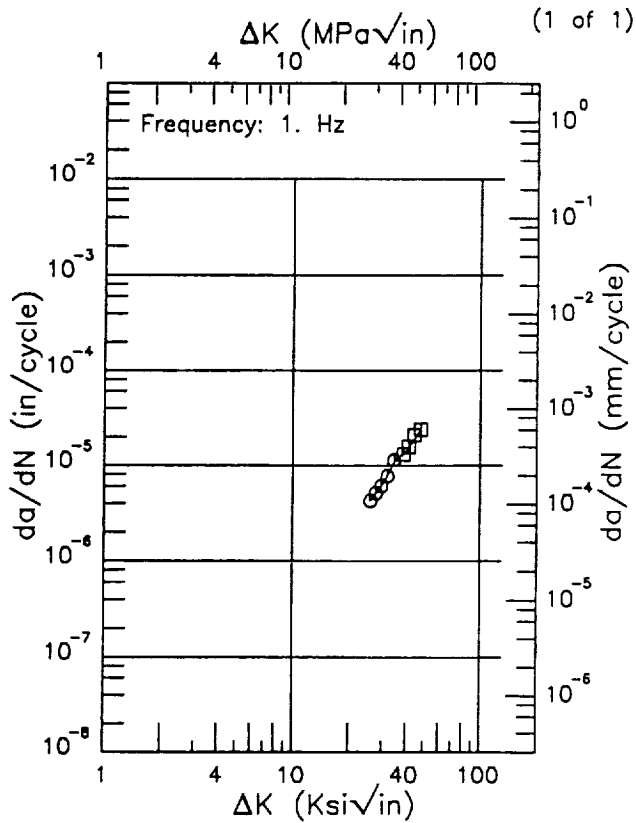
Life Prediction Ratio Summary



F A508

Condition/Ht: -99  
 Form: Weldment  
 Specimen Type:  
 Orientation: T-S  
 Stress Ratio: 0.  
 Environment: LAB AIR; RT

Yield Strength:  
 Ult. Strength:  
 Specimen Thk: 0.65 in.  
 Specimen Width: 1.654 in.  
 Ref: EPBAB



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
25.72 (min)	4.26
30.	6.44
35.	11.6
40.	14.2
47.63 (max)	23.7

$\Delta K$  (Ksi $\sqrt{\text{in}}$ )       $da/dN$  ( $10^{-6}$  in/cycle)

RMS %  
 Error  
 3.61

Life Prediction Ratio Summary  

 0. .5 .8 1.25 2.

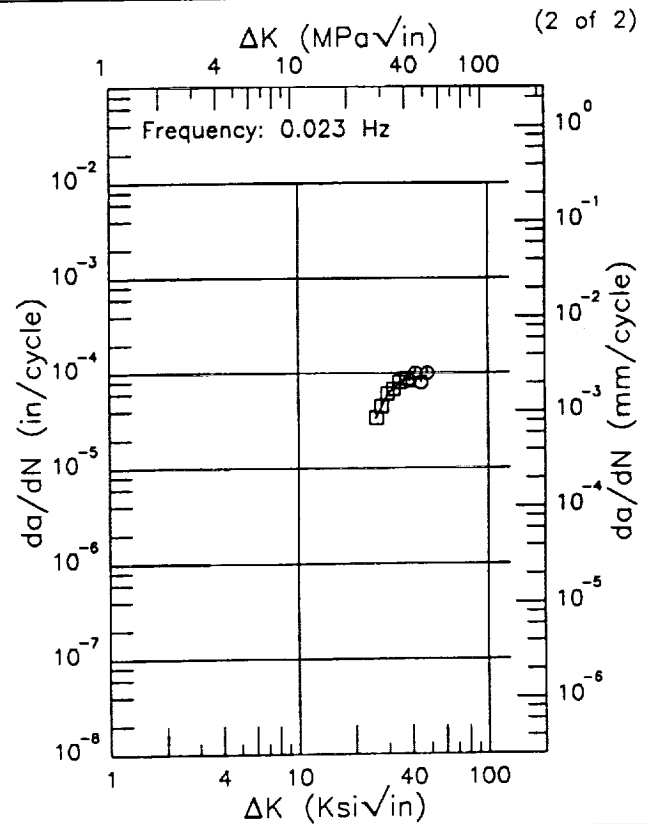
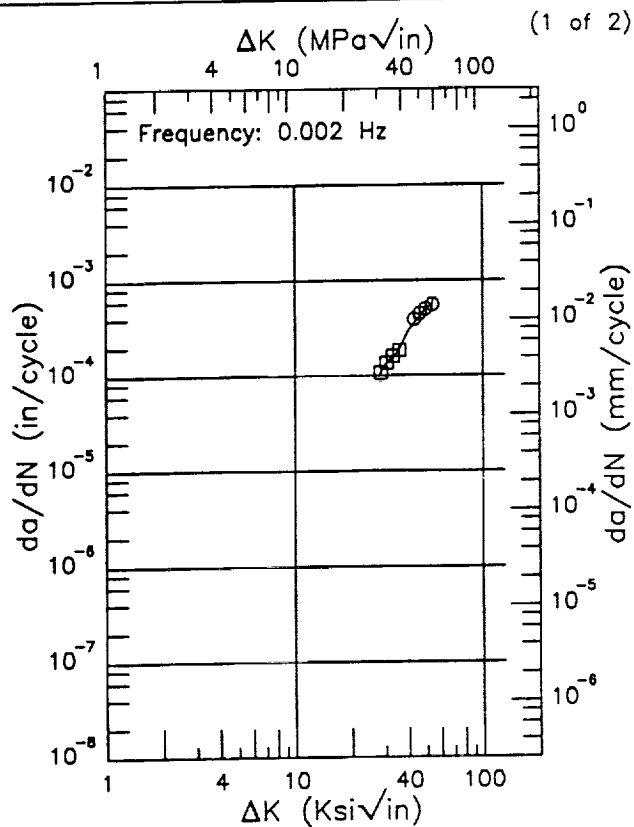
RMS %  
 Error

Life Prediction Ratio Summary  

 0. .5 .8 1.25 2.

Condition/Ht: -99  
 Form: Weldment  
 Specimen Type:  
 Orientation: T-S  
 Stress Ratio: 0.  
 Environment: BWR WATER; 554°F

Yield Strength:  
 Ult. Strength:  
 Specimen Thk: 0.65 in.  
 Specimen Width: 1.654 in.  
 Ref: EPBAB



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
28.47 (min)	105.
30.	130.
35.	174.
40.	298.
50.	505.
53.64 (max)	553.

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
25.72 (min)	33.8
30.	60.8
35.	82.8
40.	86.9
47.63 (max)	93.3

RMS %  
 Error  
 4.98

Life Prediction Ratio Summary

0. .5 .8 1.25 2.---

RMS %  
 Error  
 6.44

Life Prediction Ratio Summary

0. .5 .8 1.25 2.---

A508

Condition/Ht: -99

Form:

Specimen Type: CT

Orientation: T-L

Stress Ratio: 0.2

Frequency: 0. Hz

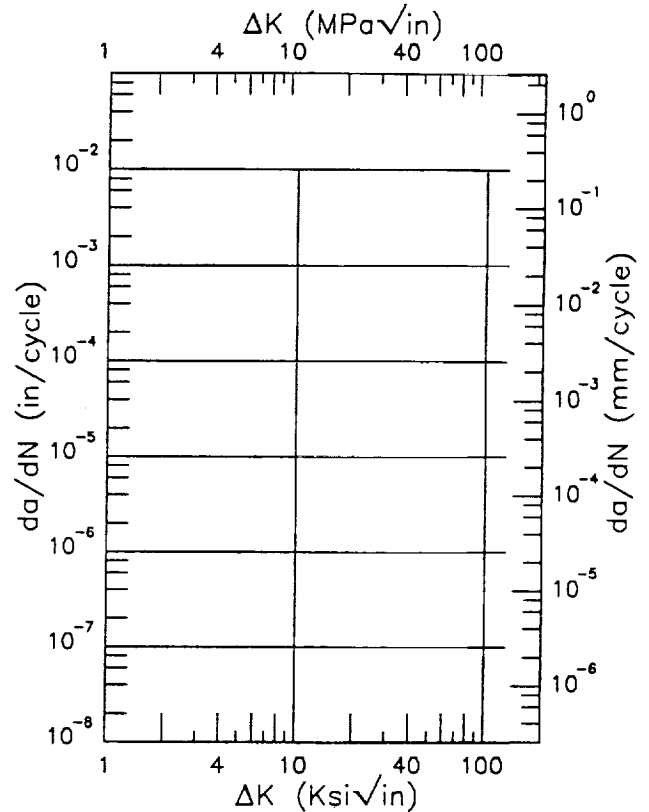
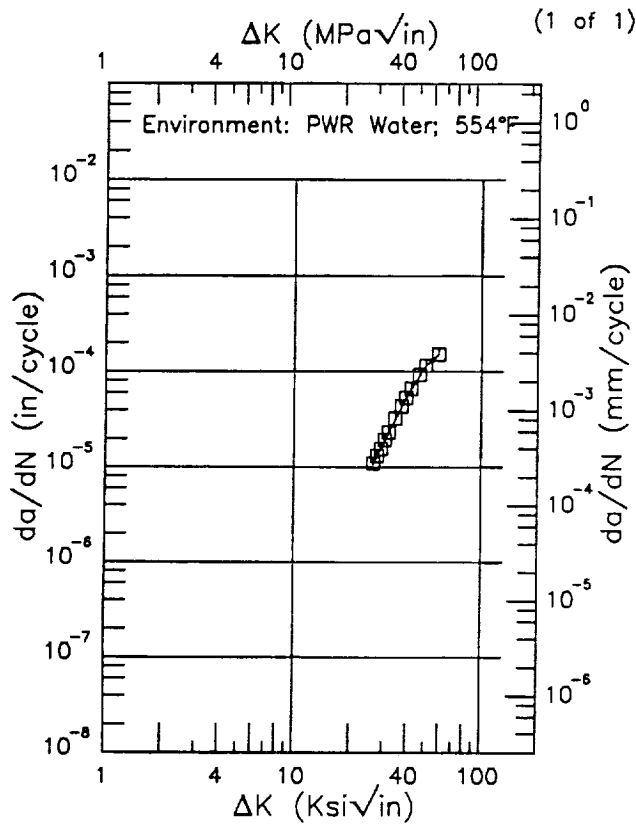
Yield Strength: 71.1 ksi

Ult. Strength: 92.2 ksi

Specimen Thk: 1.969 in.

Specimen Width: 3.937 in.

Ref: EPBER

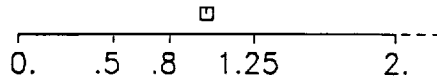


$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
26.30 (min)	10.6
30.	18.0
35.	33.9
40.	56.0
50.	113.
58.47 (max)	150.

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
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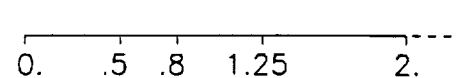
RMS %  
Error  
1.35

Life Prediction Ratio Summary



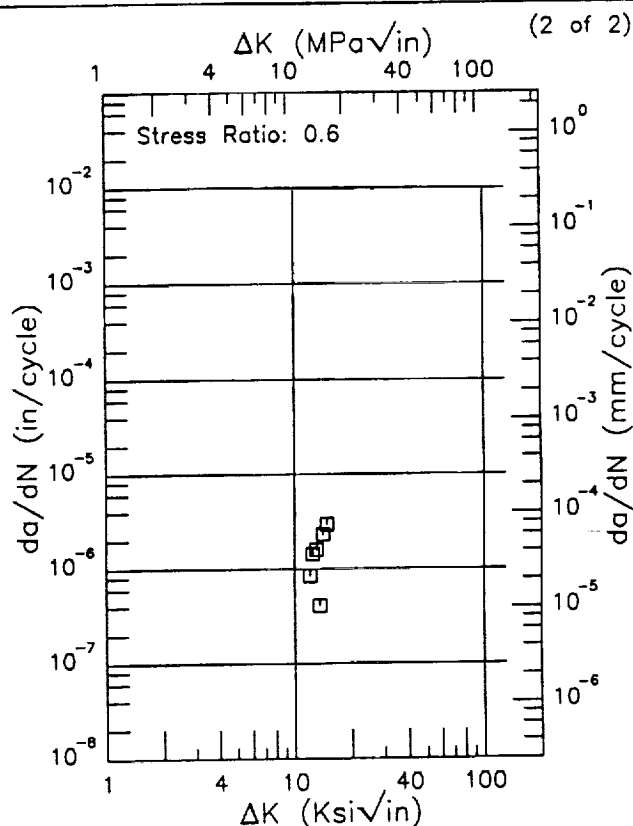
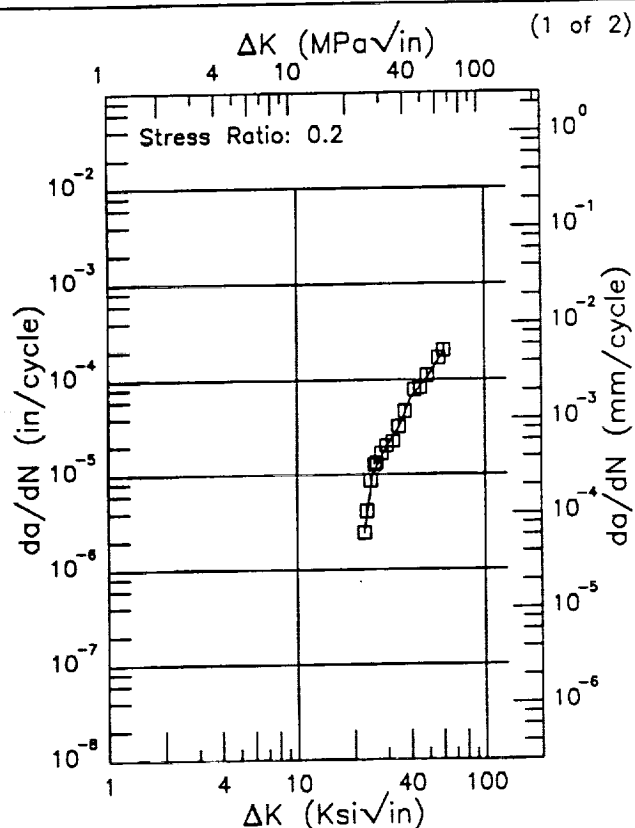
RMS %  
Error

Life Prediction Ratio Summary



Condition/Ht: -99  
 Form:  
 Specimen Type: CT  
 Orientation:  
 Frequency: 0. Hz  
 Environment: PWR WATER;554°F

Yield Strength: 67. ksi  
 Ult. Strength: 86.2 ksi  
 Specimen Thk: 1.969 in.  
 Specimen Width: 3.937 in.  
 Ref: EPBER

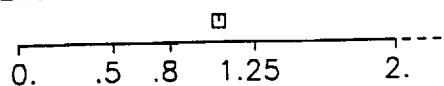


ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
22.53 (min)	2.53
25.	10.2
30.	20.2
35.	33.7
40.	65.5
50.	110.
60.	197.
60.19 (max)	198.

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
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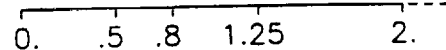
RMS %  
 Error  
 8.61

Life Prediction Ratio Summary



RMS %  
 Error

Life Prediction Ratio Summary



F | A508 |

Condition/Ht: -99

Form:

Specimen Type: CT

Orientation: T-L

Stress Ratio: 0.2

Environment: PWR WATER;550°F

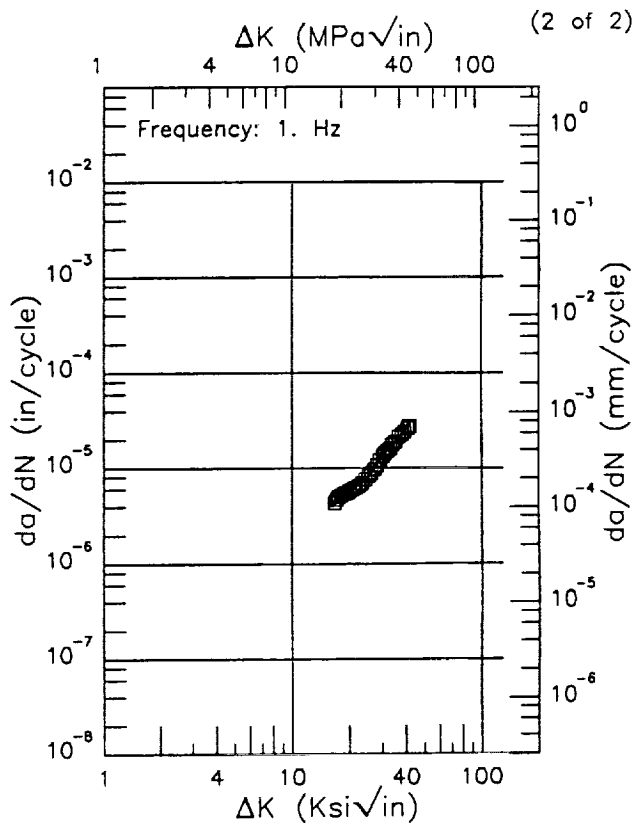
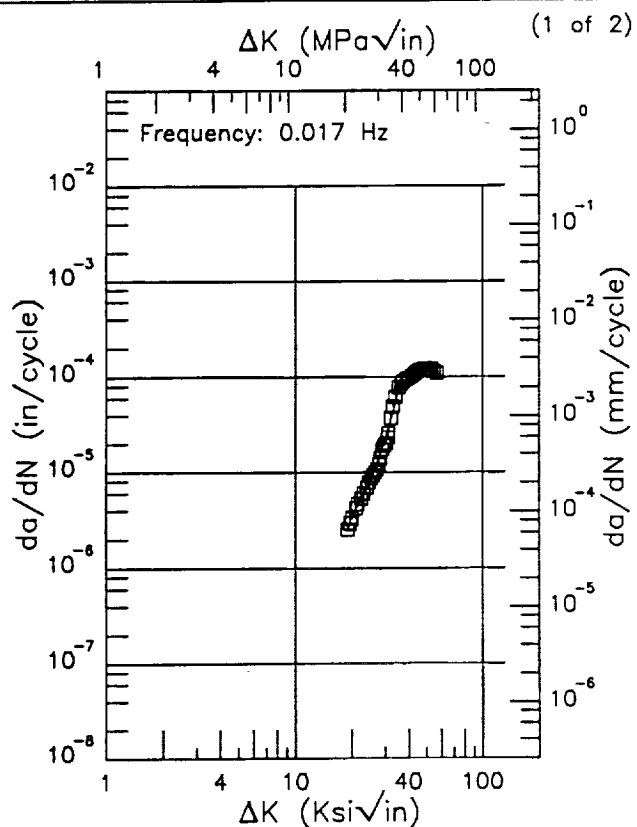
Yield Strength: 78. ksi

Ult. Strength: 99.5 ksi

Specimen Thk: 1 in.

Specimen Width: 2 in.

Ref: EPJNM



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
18.79 (min)	2.45
20.	3.52
25.	8.13
30.	22.2
35.	68.6
40.	109.
50.	119.
56.41 (max)	103.

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
16.76 (min)	4.54
20.	5.66
25.	7.94
30.	13.0
35.	19.1
40.	25.6
41.19 (max)	27.5

RMS %  
Error  
7.37

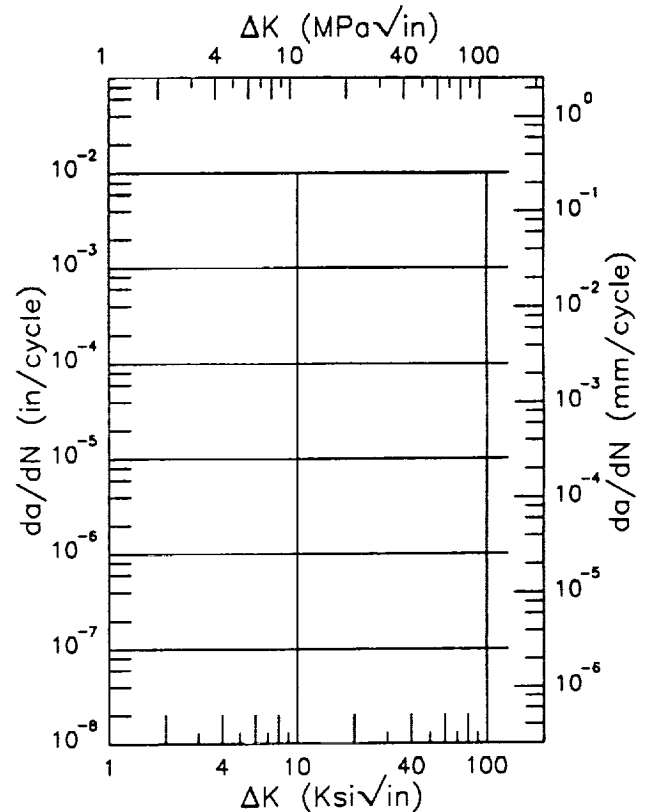
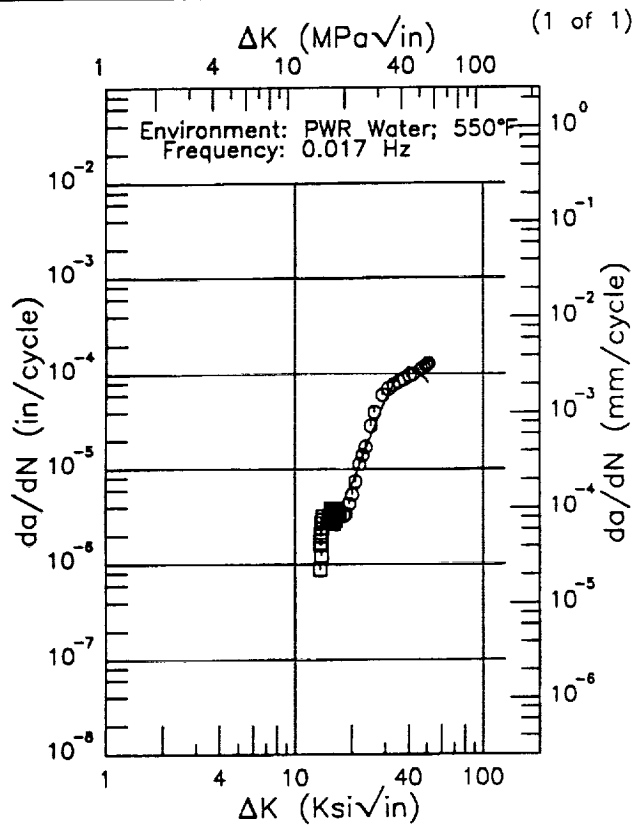
Life Prediction Ratio Summary  
□  
0. .5 .8 1.25 2.

RMS %  
Error  
2.20

Life Prediction Ratio Summary  
□  
0. .5 .8 1.25 2.

Condition/Ht: -99  
 Form:  
 Specimen Type: CT  
 Orientation: T-L  
 Stress Ratio: 0.2

Yield Strength: 68.9 ksi  
 Ult. Strength: 92.2 ksi  
 Specimen Thk: 2 in.  
 Specimen Width: 4 in.  
 Ref: EPCUL;EPJNM



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
13.46 (min)	2.52
16.	3.05
20.	7.02
25.	21.9
30.	53.7
35.	94.4
40.	121.
50.	86.9
50.79 (max)	81.4

$\Delta K$  (Ksi $\sqrt{\text{in}}$ )       $da/dN$  ( $10^{-6}$  in/cycle)

RMS %  
 Error  
 19.88

Life Prediction Ratio Summary  

 0. .5 .8 1.25 2.

RMS %  
 Error

Life Prediction Ratio Summary  

 0. .5 .8 1.25 2.



EF A508

Condition/Ht: -99

Form:

Specimen Type: CT

Orientation: T-L

Stress Ratio: 0.2

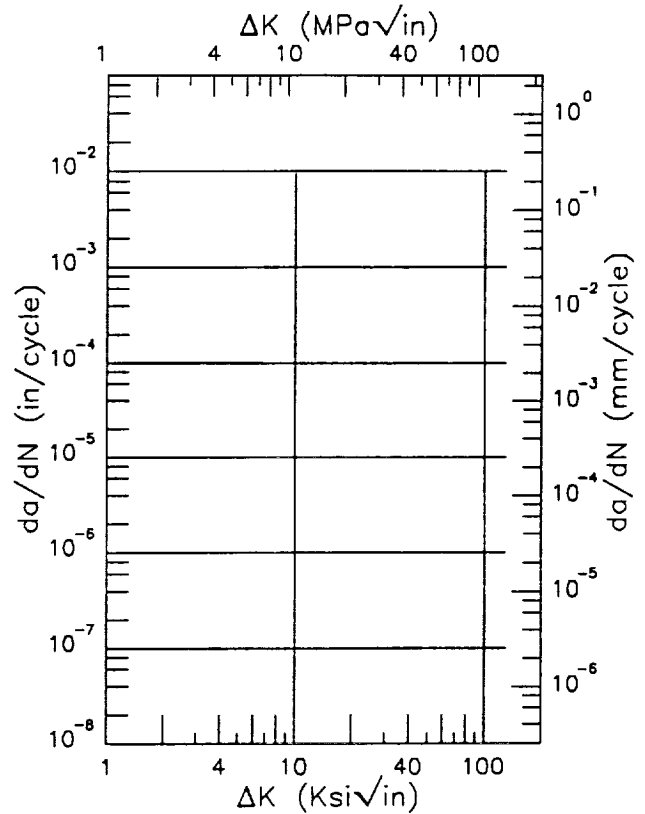
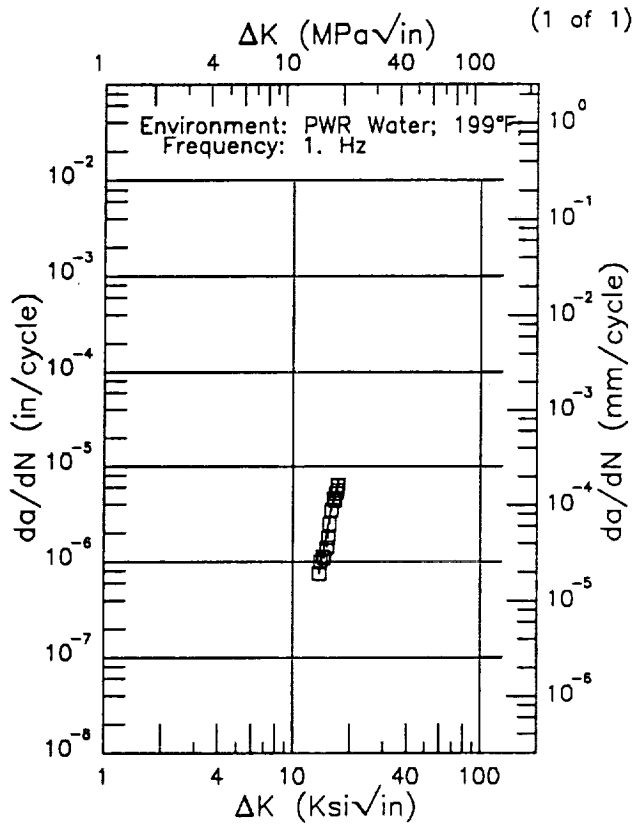
Yield Strength: 68.9 ksi

Ult. Strength: 92.2 ksi

Specimen Thk: 1 in.

Specimen Width: 2 in.

Ref: EPCUL



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
13.75 (min)	0.747
16.	3.74
17.17 (max)	6.54

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
13.75 (min)	0.747
16.	3.74
17.17 (max)	6.54

RMS %  
Error  
13.64

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

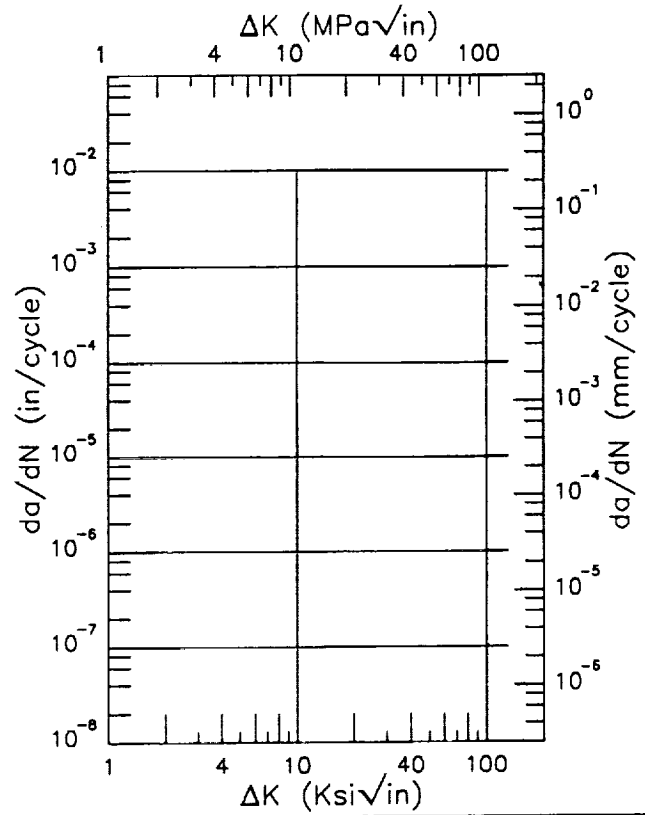
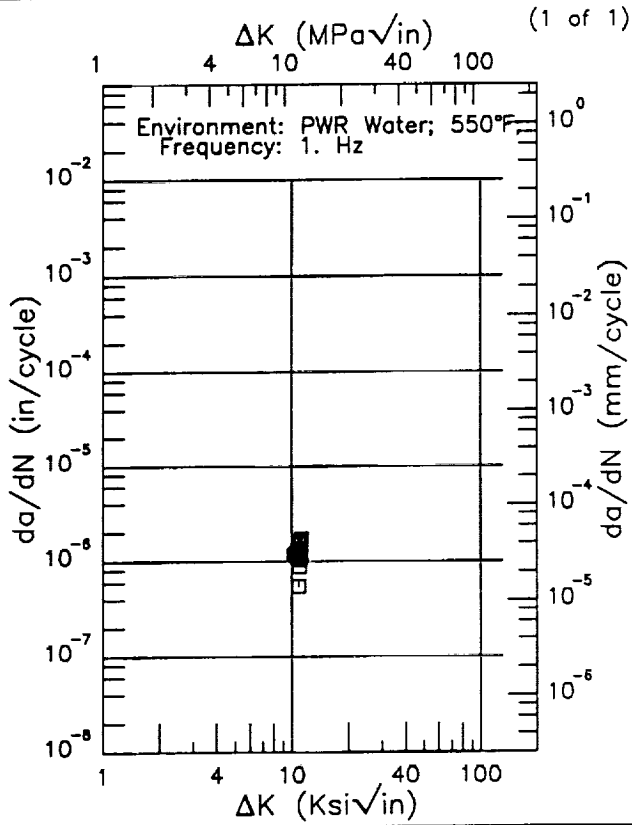
RMS %  
Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

Condition/Ht: -99  
 Form:  
 Specimen Type: CT  
 Orientation: T-L  
 Stress Ratio: 0.7

Yield Strength: 68.9 ksi  
 Ult. Strength: 92.2 ksi  
 Specimen Thk: 2 in.  
 Specimen Width: 4 in.  
 Ref: EPCUL



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
10.15 (min)	1.15
11.20 (max)	1.48

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
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RMS %  
 Error  
 26.78

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS %  
 Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

R

A508

Condition/Ht: -99

Form:

Specimen Type: CT

Orientation: T-L

Frequency: 0. Hz

Environment: PWR WATER;550°F

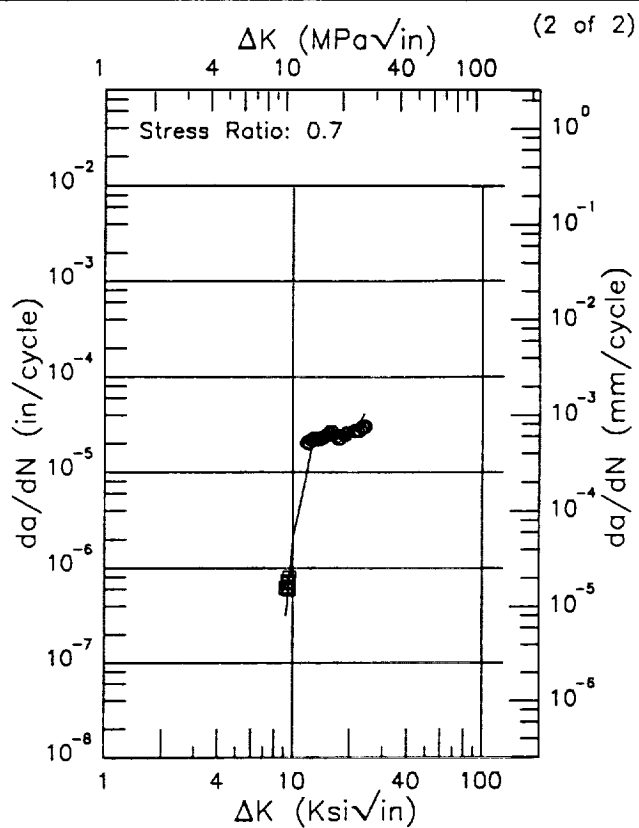
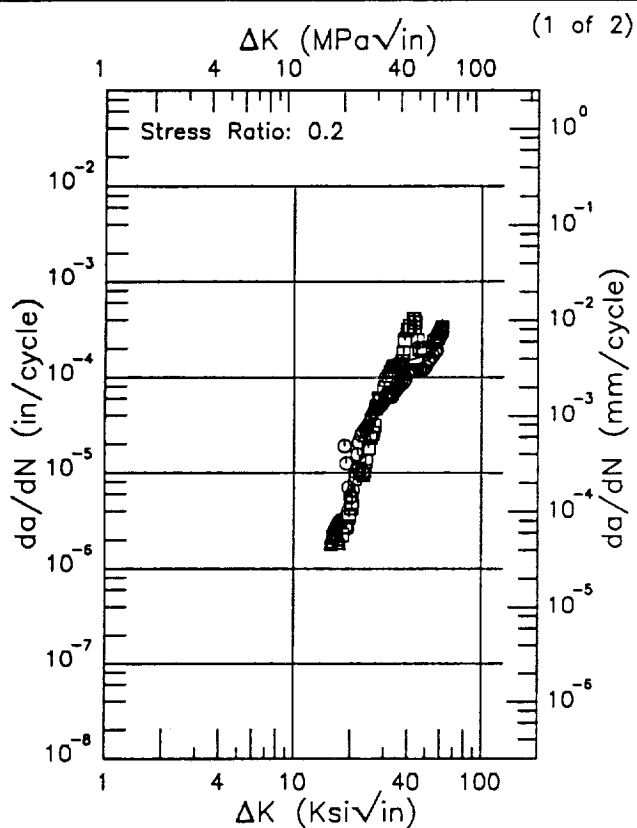
Yield Strength: 68.9 ksi

Ult. Strength: 92.2 ksi

Specimen Thk: 2 in.

Specimen Width: 5.1 in.

Ref: EPJNM;EPCUL



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
15.61 (min)	2.26
16.	2.41
20.	6.72
25.	26.6
30.	67.2
35.	113.
40.	150.
50.	173.
60.	314.
61.22 (max)	406.

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
9.16 (min)	0.317
10.	2.00
13.	24.4
16.	26.6
20.	21.5
24.02 (max)	41.4

RMS %  
Error  
46.81

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

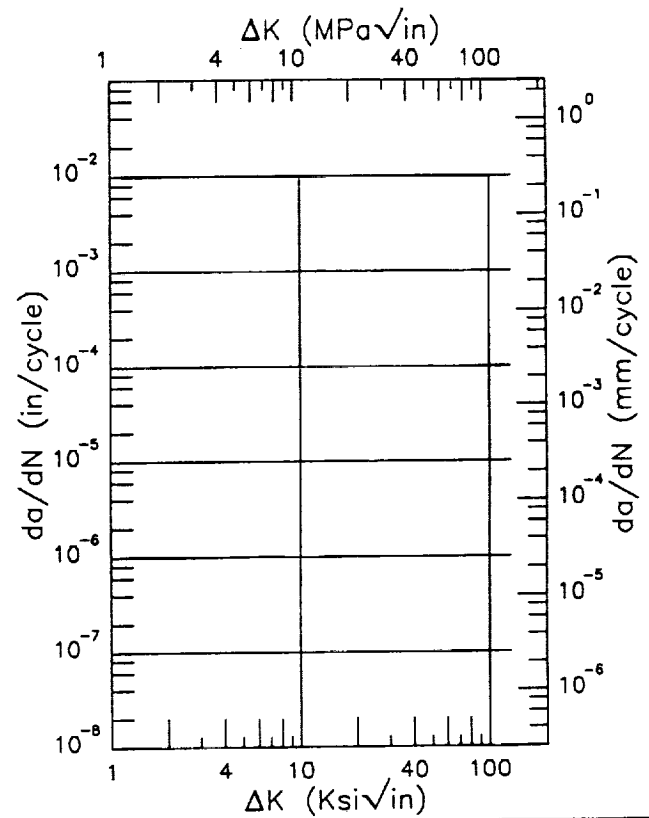
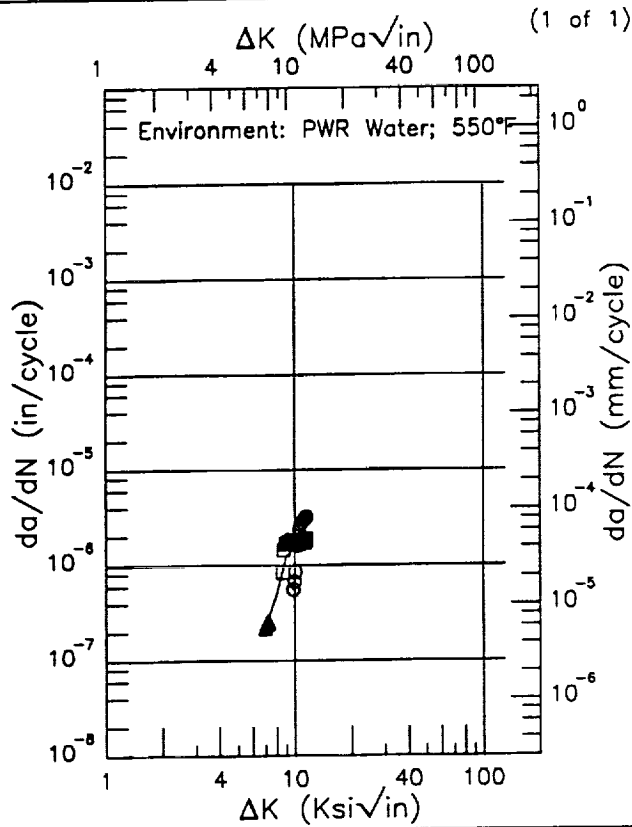
RMS %  
Error  
31.25

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

Condition/Ht: -99  
 Form:  
 Specimen Type: CT  
 Orientation: T-L  
 Stress Ratio: 0.7  
 Frequency: 1 Hz

Yield Strength: 68.9 ksi  
 Ult. Strength: 92.2 ksi  
 Specimen Thk: 2 in.  
 Specimen Width: 5.1 in.  
 Ref: EPCUL



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
6.91 (min)	0.233
7.	0.230
8.	0.492
9.	1.26
10.	1.50
11.47 (max)	3.00

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
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RMS %  
 Error  
 27.95

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS %  
 Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

E | A508 |

Condition/Ht: -99

Form:

Specimen Type: CT

Orientation: L-T

Stress Ratio: 0.06

Frequency: 0.1 Hz

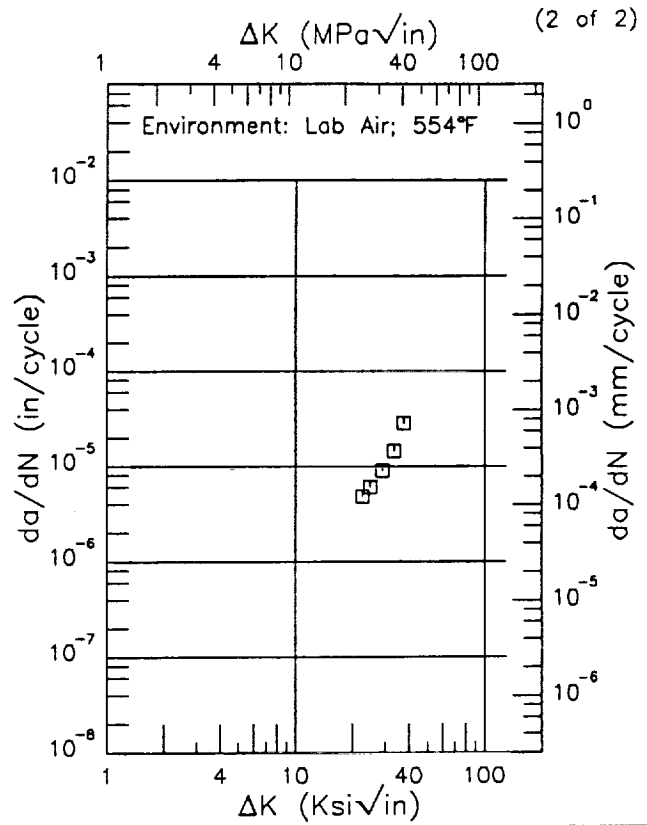
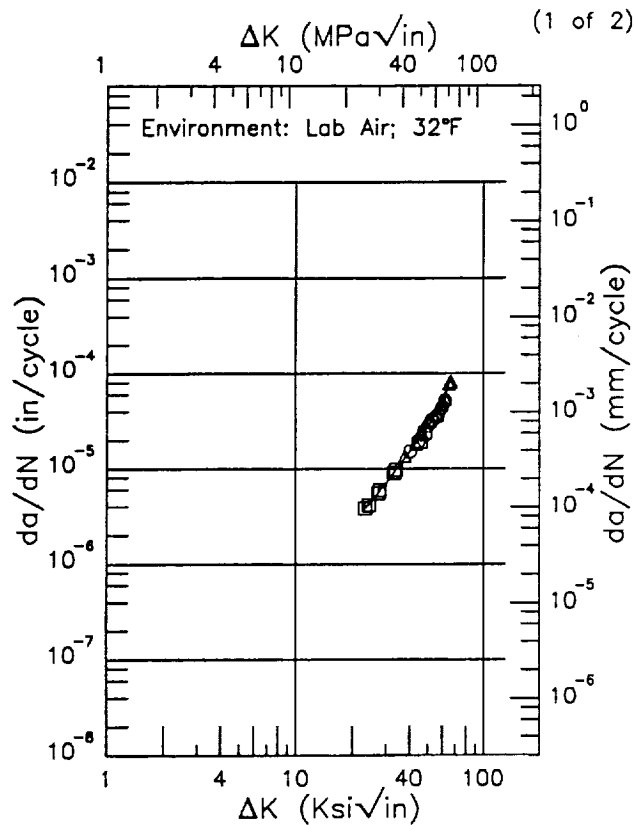
Yield Strength: 70.9 ksi

Ult. Strength: 92.9 ksi

Specimen Thk: 0.984 in.

Specimen Width: 1.969 in.

Ref: EPBER



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
23.20 (min)	3.71
25.	4.43
30.	7.02
35.	10.5
40.	14.9
50.	26.6
60.	47.8
66.47 (max)	87.0

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
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RMS %  
Error

5.95

Life Prediction Ratio Summary

$\sigma \Delta$

0. .5 .8 1.25 2.

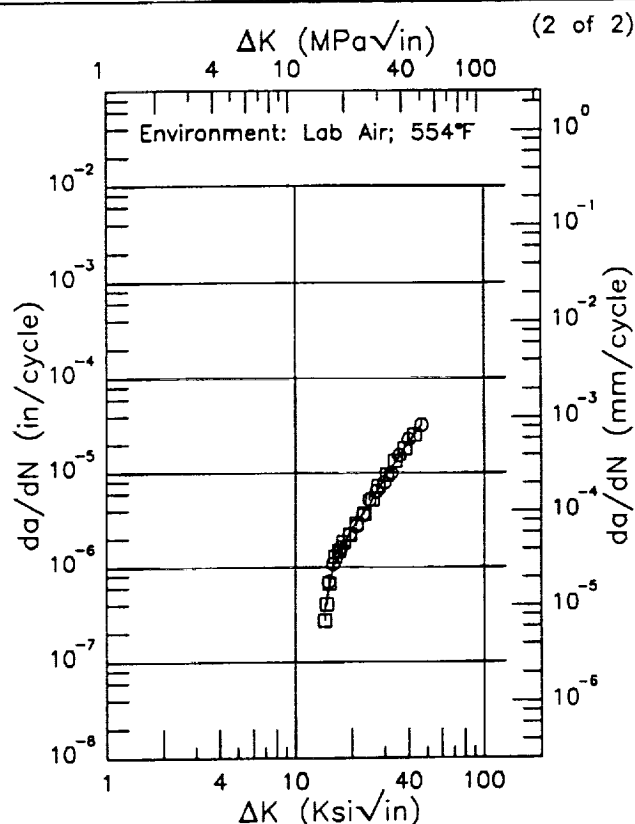
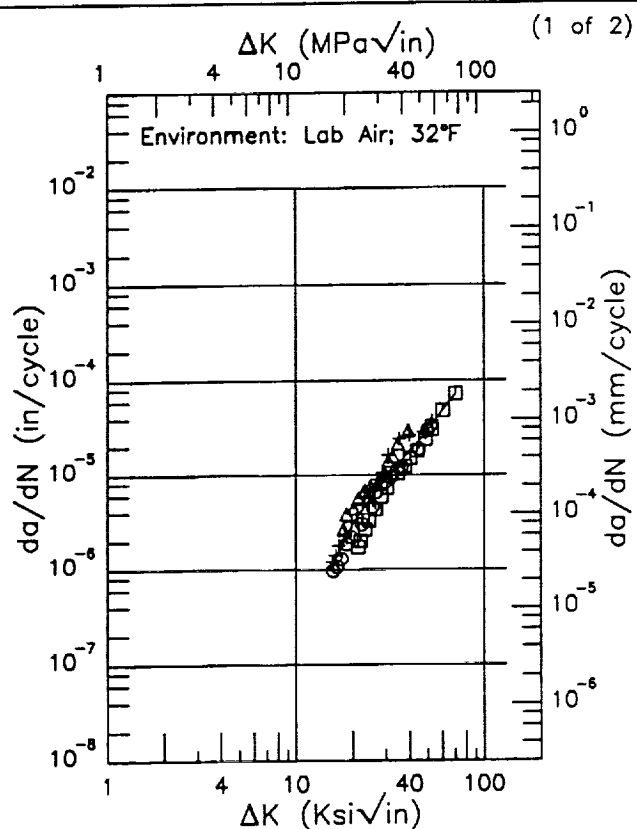
RMS %  
Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

Condition/Ht: -99  
 Form:  
 Specimen Type: CT  
 Orientation: L-T  
 Stress Ratio: 0.06  
 Frequency: 10 Hz

Yield Strength: 70.9 ksi  
 Ult. Strength: 92.9 ksi  
 Specimen Thk: 0.984 in.  
 Specimen Width: 1.969 in.  
 Ref: EPBER



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
15.52 (min)	1.07
16.	1.24
20.	3.02
25.	5.80
30.	9.14
35.	13.2
40.	18.0
50.	29.2
60.	49.0
70.	71.3
70.13 (max)	71.4

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
14.27 (min)	0.338
16.	1.02
20.	2.57
25.	4.74
30.	9.06
35.	14.2
40.	21.4
46.41 (max)	31.9

RMS %  
 Error  
 33.30

Life Prediction Ratio Summary

□ ○ △

0. .5 .8 1.25 2.

RMS %  
 Error  
 10.69

Life Prediction Ratio Summary

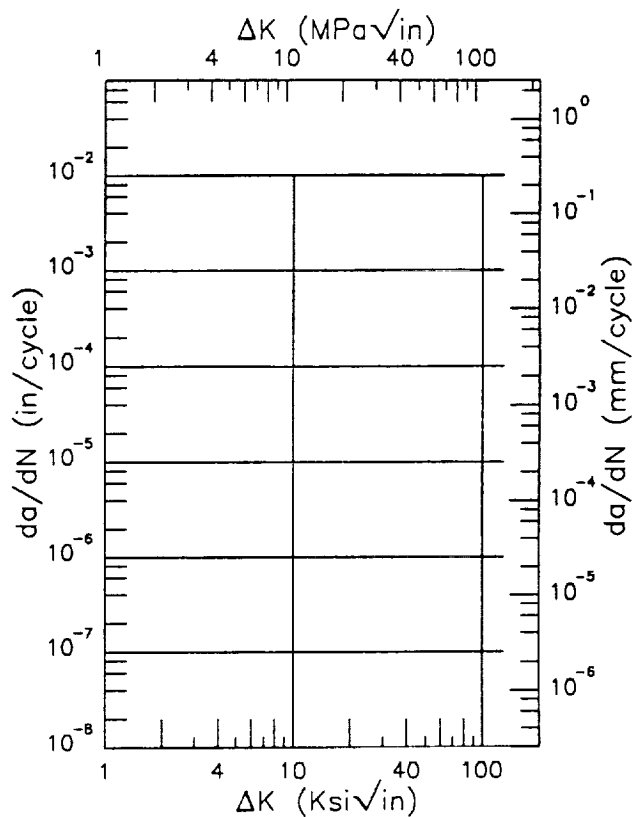
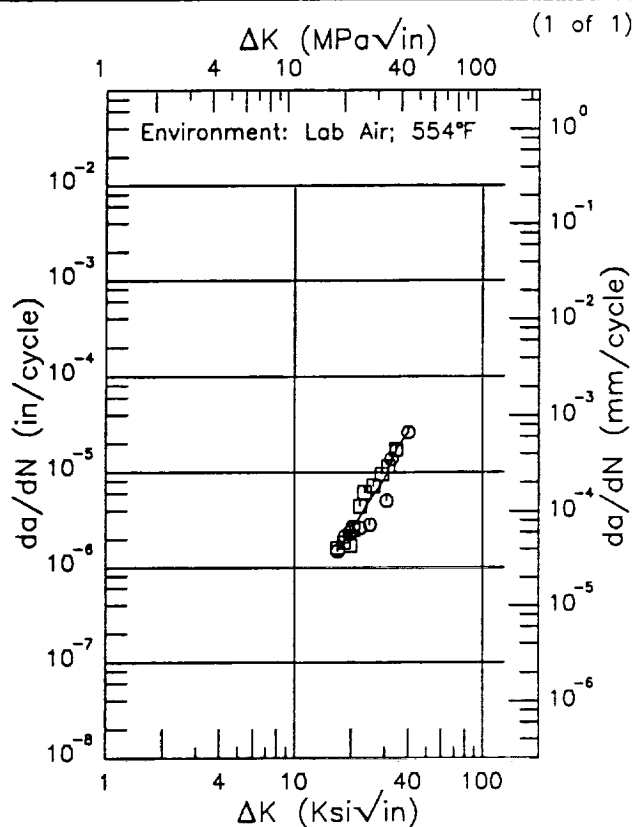
□ ○

0. .5 .8 1.25 2.

E | A508 |

Condition/Ht: -99  
 Form:  
 Specimen Type: CT  
 Orientation: L-T  
 Stress Ratio: 0.06  
 Frequency: 10 Hz

Yield Strength: 70.9 ksi  
 Ult. Strength: 92.9 ksi  
 Specimen Thk: 0.591 in.  
 Specimen Width: 1.181 in.  
 Ref: EPBER



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
16.78 (min)	1.52
20.	2.43
25.	5.20
30.	8.56
35.	18.2
39.99 (max)	25.8

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
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RMS %  
 Error  
 22.28

Life Prediction Ratio Summary  
 0. .5 .8 1.25 2.

RMS %  
 Error

Life Prediction Ratio Summary  
 0. .5 .8 1.25 2.

Condition/Ht: -99

Form:

Specimen Type: CT

Orientation: T-S

Stress Ratio: 0.2

Frequency: 0. Hz

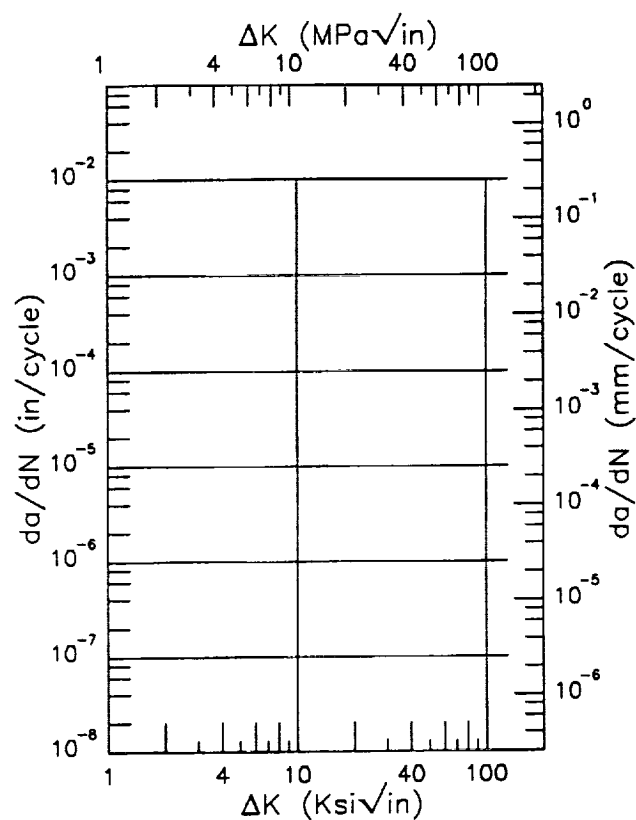
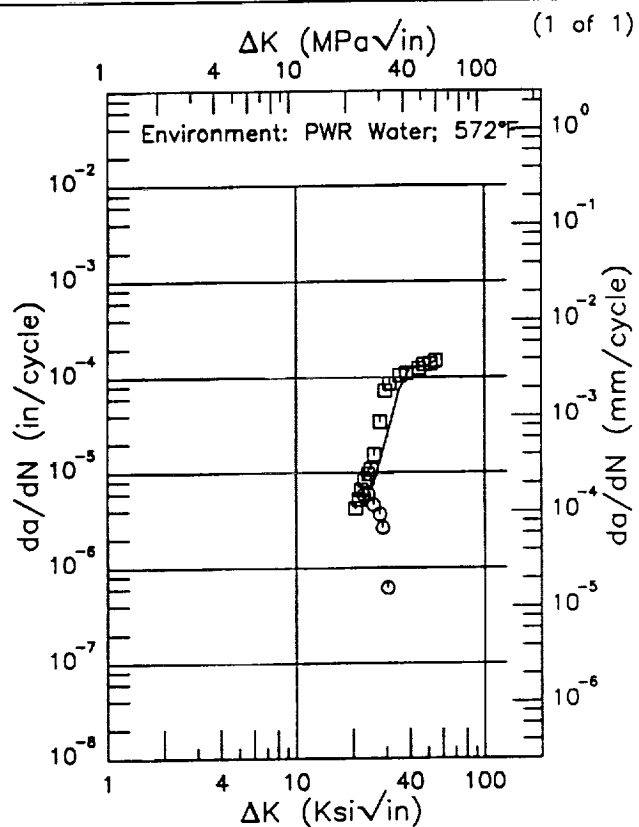
Yield Strength: 68.5 ksi

Ult. Strength: 86.2 ksi

Specimen Thk: 1.969 in.

Specimen Width: 3.937 in.

Ref: EPBER

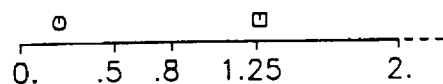


$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
20.50 (min)	7.67
25.	6.74
30.	23.2
35.	74.3
40.	127.
50.	132.
54.80 (max)	150.

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
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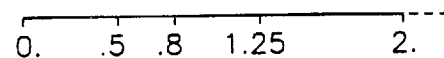
RMS %  
Error  
87.61

Life Prediction Ratio Summary



RMS %  
Error

Life Prediction Ratio Summary





E A508

Condition/Ht: -99

Form:

Specimen Type: CT

Orientation: T-L

Stress Ratio: 0.1

Frequency: 0. Hz

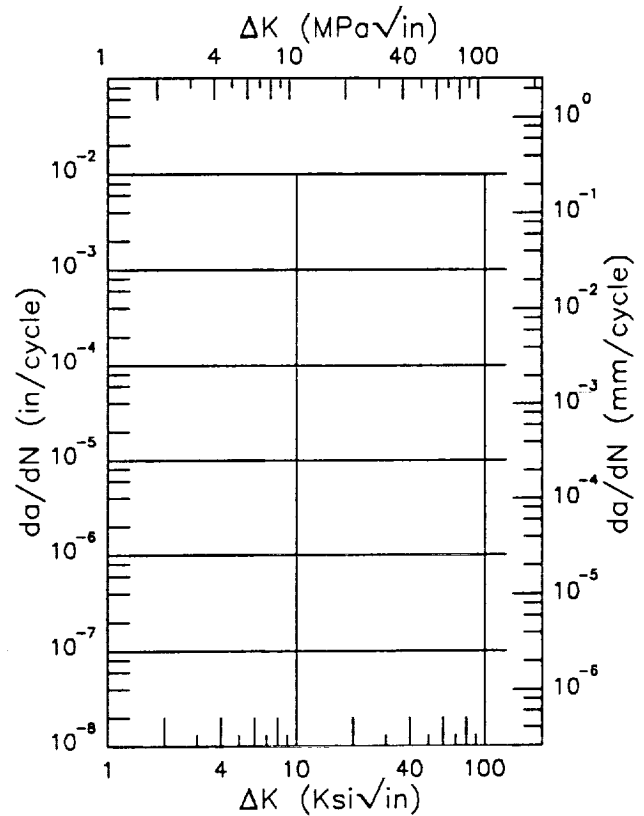
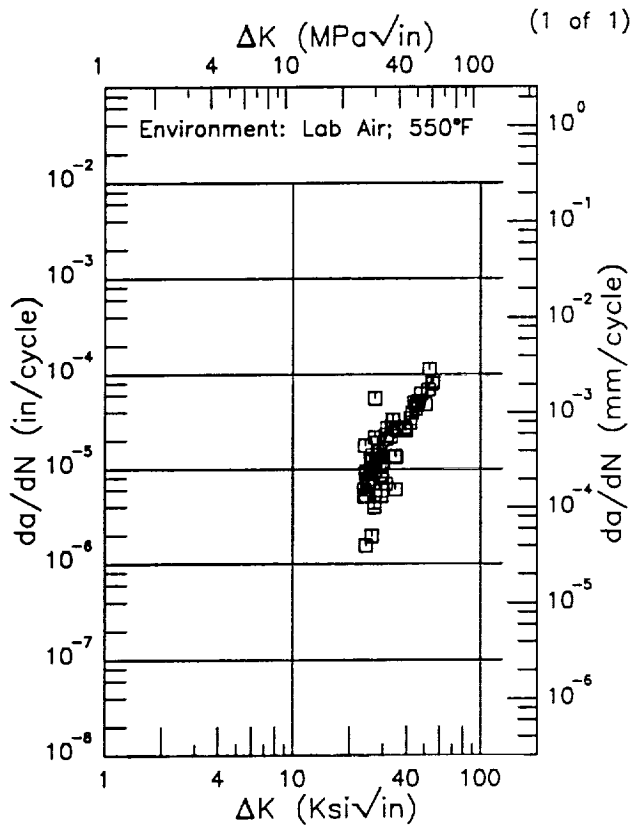
Yield Strength: 67. ksi

Ult. Strength: 87.9 ksi

Specimen Thk: 1 in.

Specimen Width: 2 in.

Ref: EPMEA



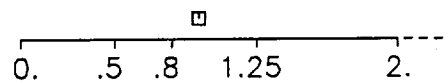
$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
23.68 (min)	7.51
25.	8.11
30.	15.0
35.	21.9
40.	29.3
50.	59.9
55.64 (max)	97.7

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
--------------------------------------	-------------------------------

RMS %  
Error

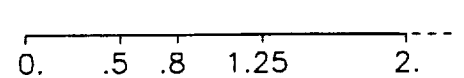
62.25

Life Prediction Ratio Summary



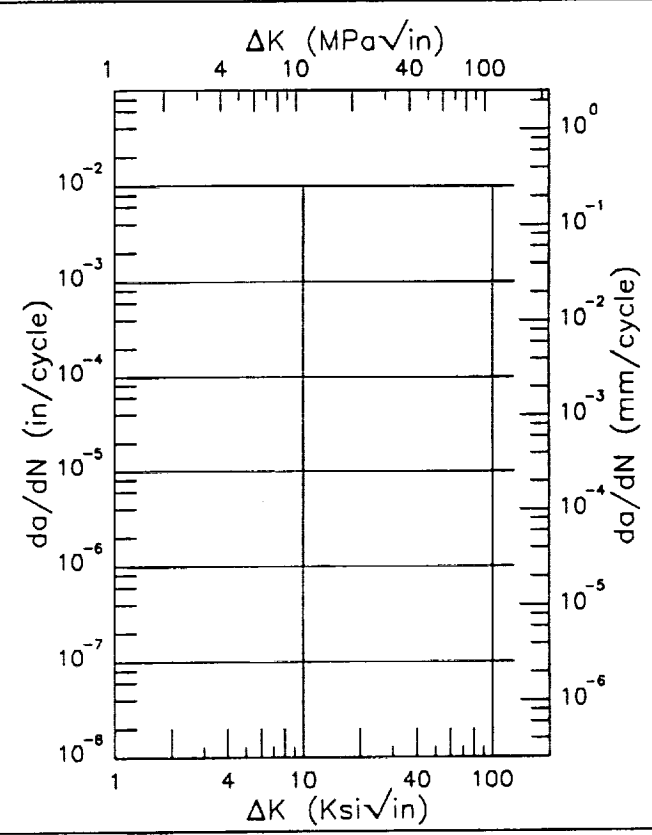
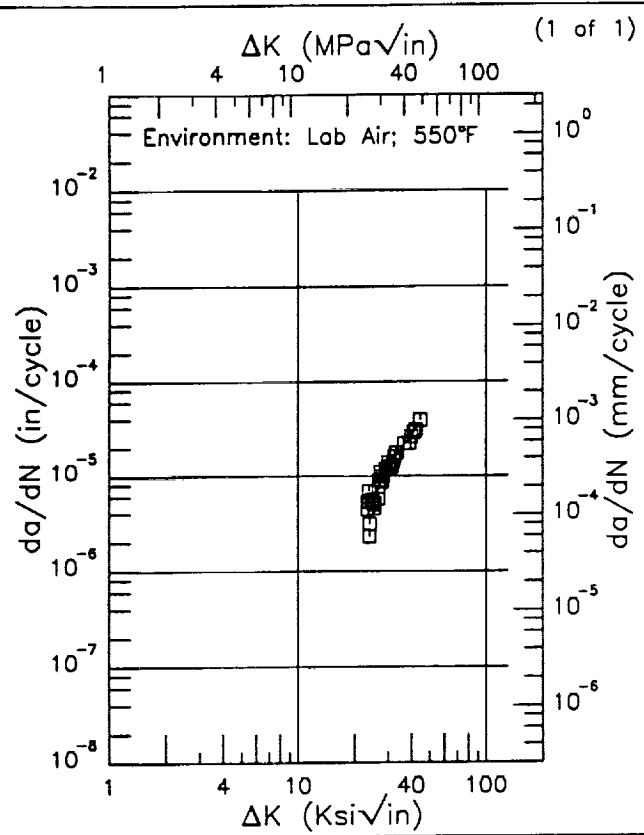
RMS %  
Error

Life Prediction Ratio Summary



Condition/Ht: -99  
 Form:  
 Specimen Type: CT  
 Orientation: T-L  
 Stress Ratio: 0.2  
 Frequency: 0. Hz

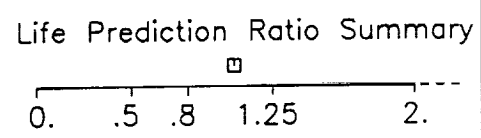
Yield Strength: 67. ksi  
 Ult. Strength: 87.9 ksi  
 Specimen Thk: 1 in.  
 Specimen Width: 2 in.  
 Ref: EPCUL



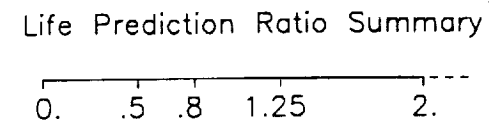
$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
23.32 (min)	3.77
25.	5.57
30.	12.0
35.	19.1
40.	27.0
44.50 (max)	36.0

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
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RMS %  
 Error  
 19.69



RMS %  
 Error



F | A508 |

Condition/Ht: -99

Form:

Specimen Type: CT

Orientation: T-L

Stress Ratio: 0.1

Environment: PWR WATER;199°F

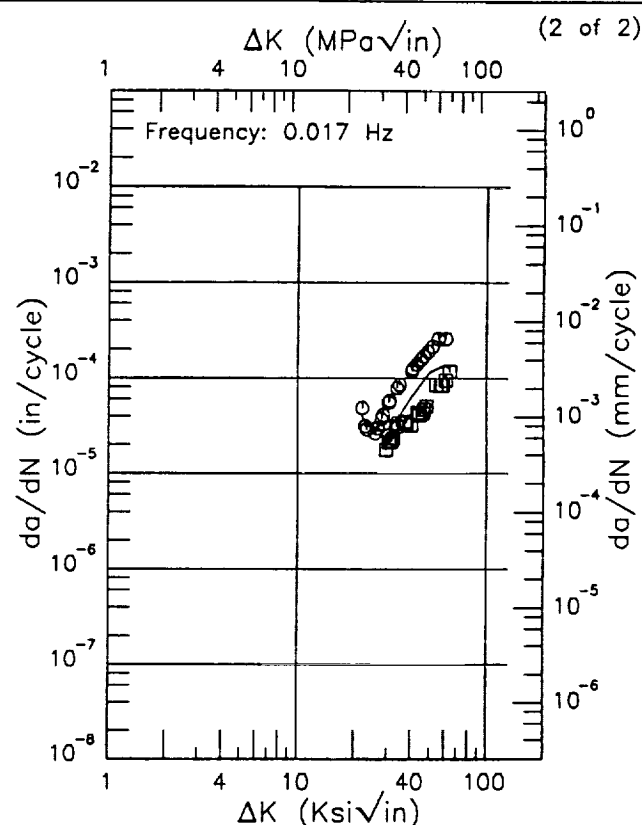
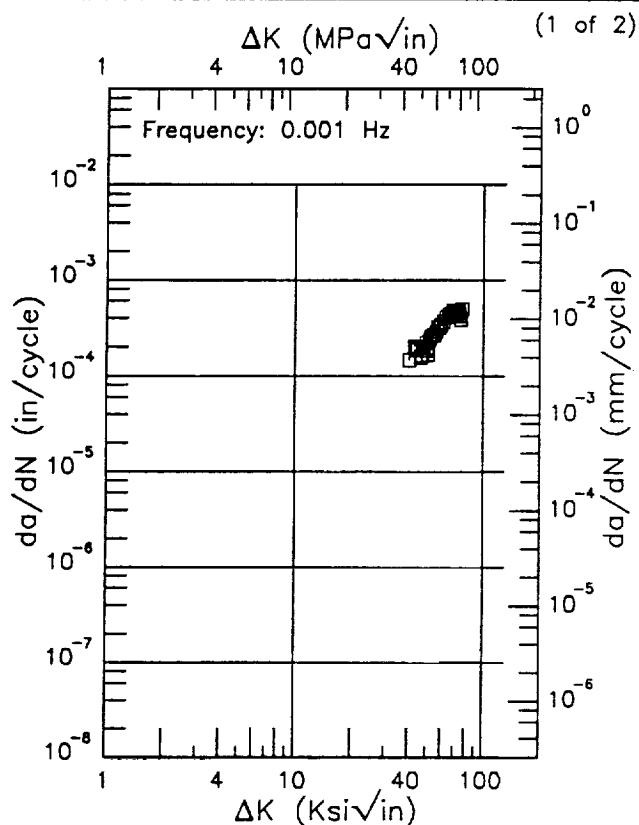
Yield Strength: 67. ksi

Ult. Strength: 87.9 ksi

Specimen Thk: 1 in.

Specimen Width: 2 in.

Ref: EPMEA



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
40.23 (min)	156.
50.	209.
60.	361.
70.	444.
76.53 (max)	441.

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
21.80 (min)	39.7
25.	27.4
30.	28.9
35.	41.4
40.	62.8
50.	117.
60.	138.
63.89 (max)	129.

RMS %  
Error  
8.67

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS %  
Error  
57.73

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

Condition/Ht: -99

Form:

Specimen Type: CT

Orientation: T-L

Stress Ratio: 0.1

Environment: PWR WATER; 550°F

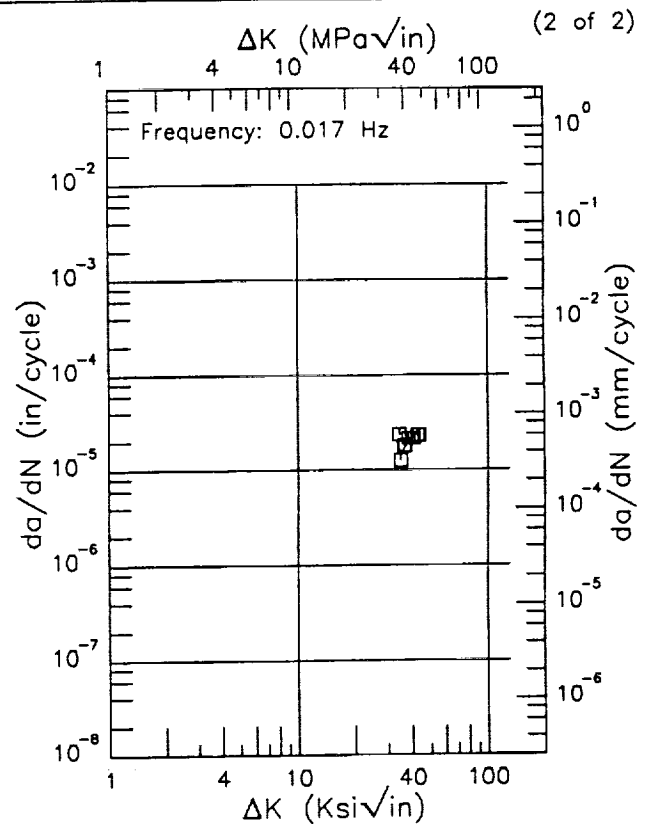
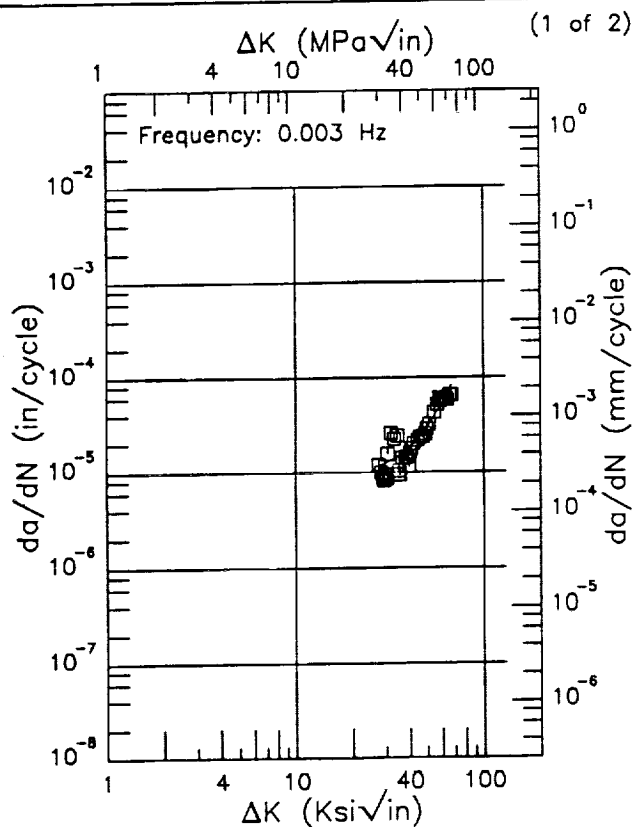
Yield Strength:

Ult. Strength:

Specimen Thk: 1 in.

Specimen Width: 2 in.

Ref: EPMEA

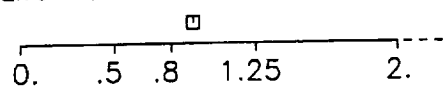


$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
27.30 (min)	11.5
30.	12.5
35.	15.0
40.	18.4
50.	30.0
60.	53.2
67.21 (max)	83.7

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
34.15 (min)	17.4
35.	14.9
40.	22.1
43.41 (max)	25.5

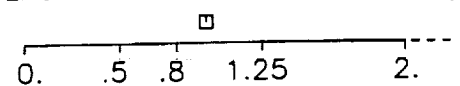
RMS %  
Error  
27.82

Life Prediction Ratio Summary



RMS %  
Error  
14.76

Life Prediction Ratio Summary



F | A508 |

Condition/Ht: -99

Form:

Specimen Type: CT

Orientation: T-L

Stress Ratio: 0.13

Environment: PWR WATER;199°F

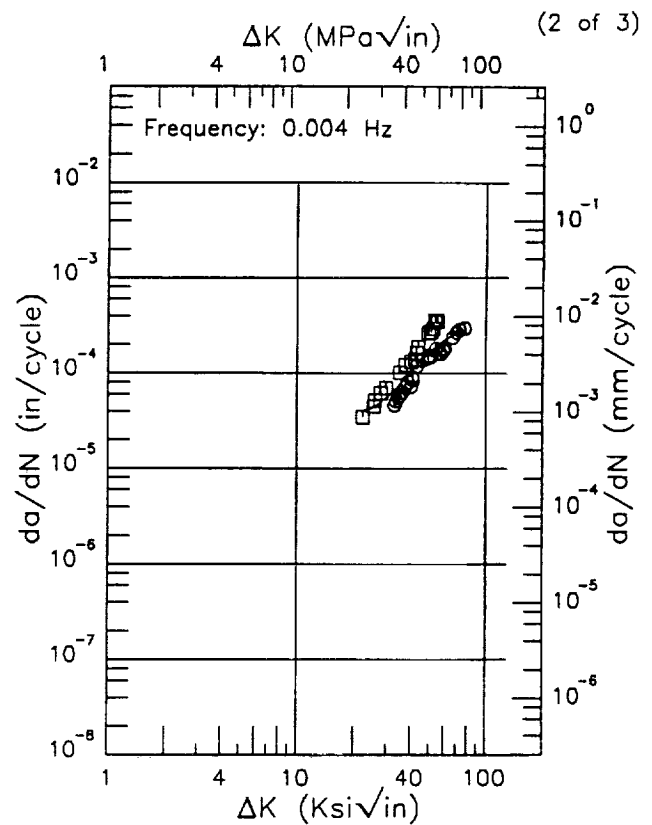
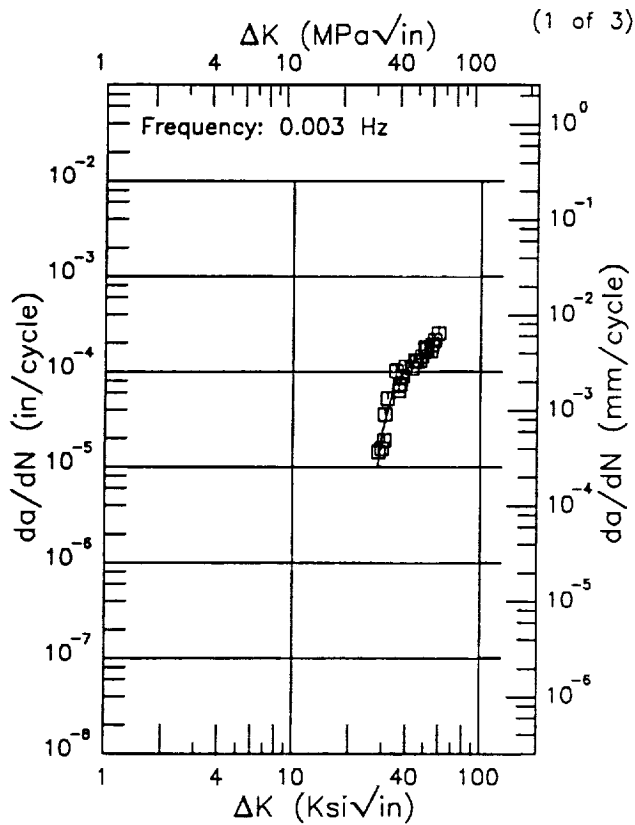
Yield Strength:

Ult. Strength:

Specimen Thk: 1 in.

Specimen Width: 2 in.

Ref: EPMEA

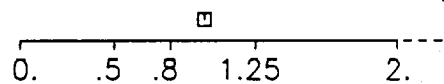


$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
28.49 (min)	10.7
30.	23.5
35.	80.2
40.	106.
50.	155.
59.16 (max)	234.

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
22.17 (min)	40.5
25.	43.0
30.	55.5
35.	76.0
40.	103.
50.	166.
60.	221.
70.	262.
76.72 (max)	282.

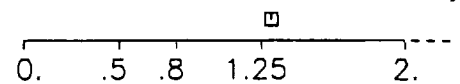
RMS %  
Error  
18.00

Life Prediction Ratio Summary



RMS %  
Error  
34.86

Life Prediction Ratio Summary



Condition/Ht: -99

Form:

Specimen Type: CT

Orientation: T-L

Stress Ratio: 0.13

Environment: PWR WATER; 199°F

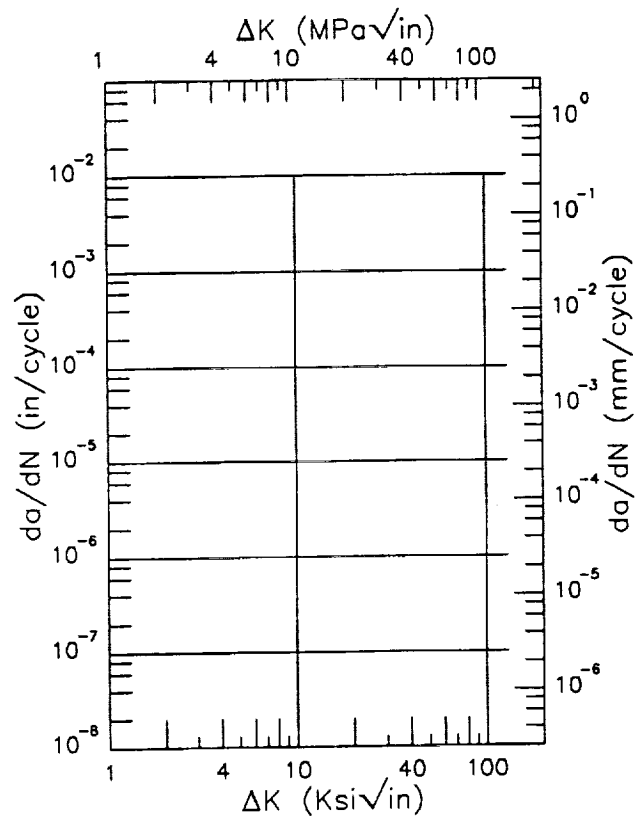
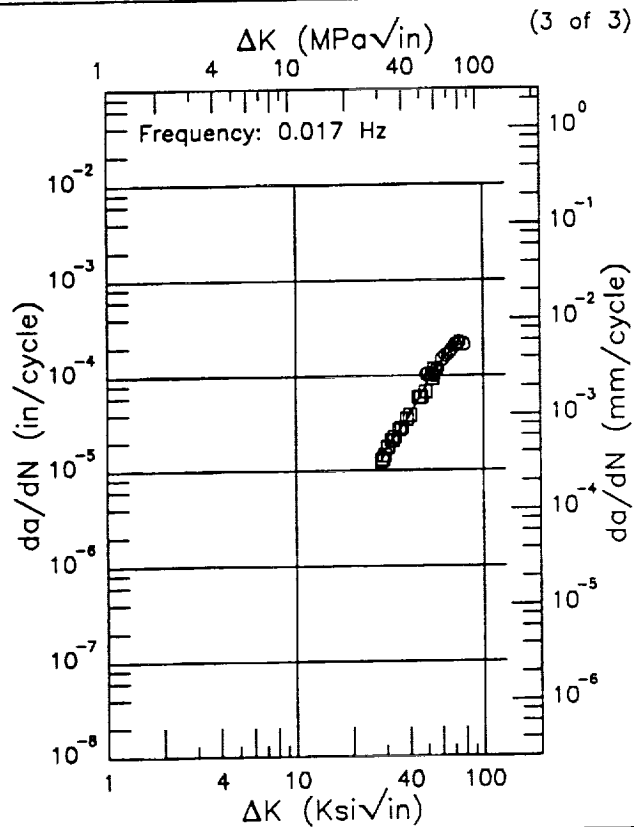
Yield Strength:

Ult. Strength:

Specimen Thk: 1 in.

Specimen Width: 2 in.

Ref: EPMEA



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
28.30 (min)	12.4
30.	16.0
35.	26.2
40.	37.9
50.	84.7
60.	142.
70.	206.
78.03 (max)	210.

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
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RMS %  
Error  
7.55

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS %  
Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

F | A508 |

Condition/Ht: -99

Form:

Specimen Type: CT

Orientation: T-L

Stress Ratio: 0.13

Environment: PWR WATER;550°F

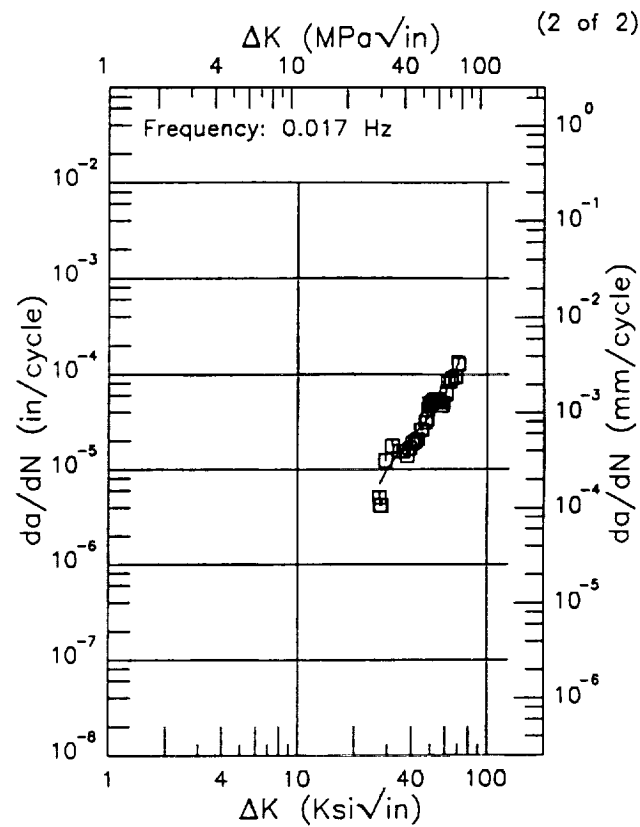
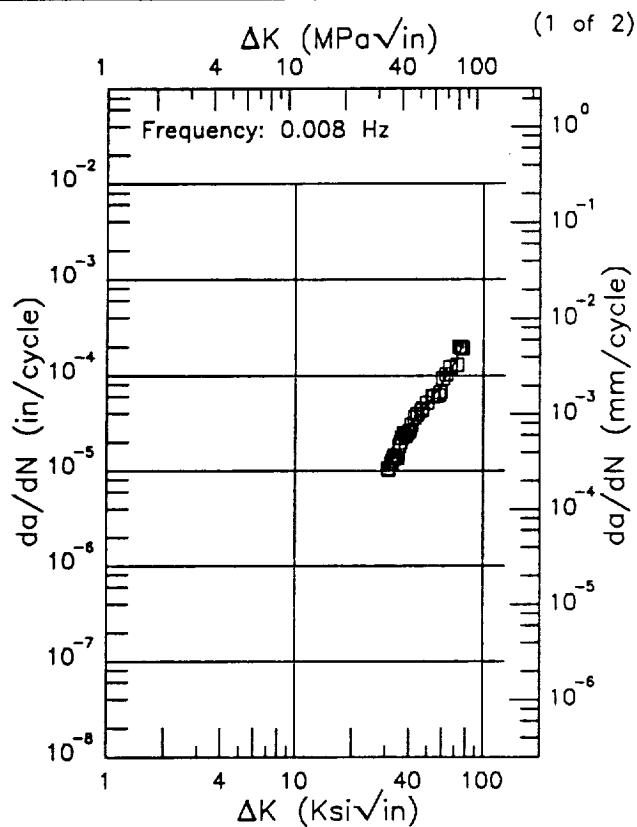
Yield Strength:

Ult. Strength:

Specimen Thk: 1 in.

Specimen Width: 2 in.

Ref: EPMEA



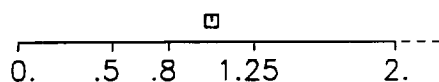
$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
30.80 (min)	10.1
35.	16.4
40.	28.2
50.	49.7
60.	83.1
70.	136.
77.14 (max)	212.

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
27.07 (min)	7.12
30.	10.3
35.	15.9
40.	21.7
50.	36.7
60.	64.9
70.	128.
70.52 (max)	133.

RMS %  
Error

7.86

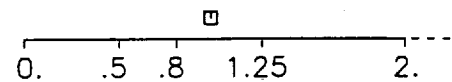
Life Prediction Ratio Summary



RMS %  
Error

22.07

Life Prediction Ratio Summary



Condition/Ht: -99

Form:

Specimen Type: CT

Orientation: T-L

Stress Ratio: 0.2

Environment: PWR WATER;550°F

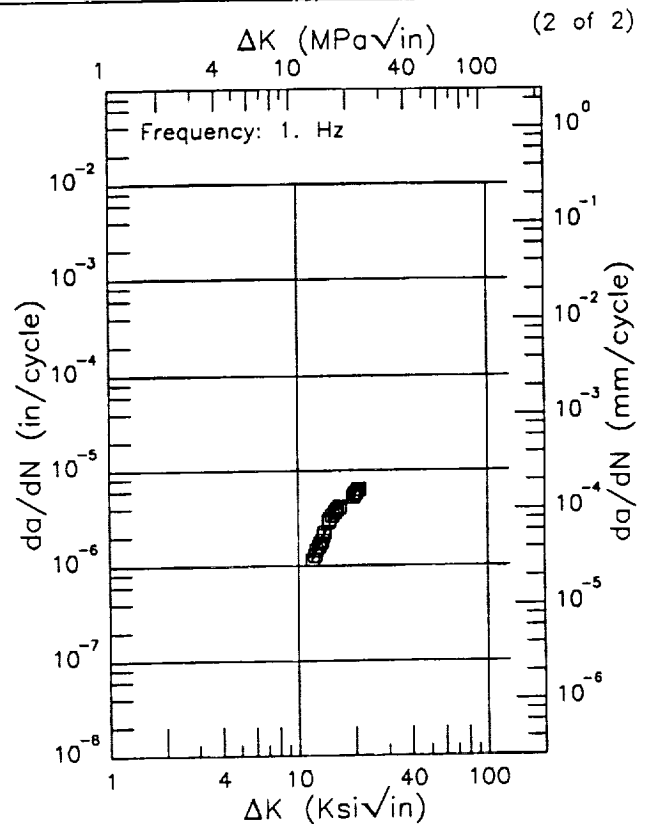
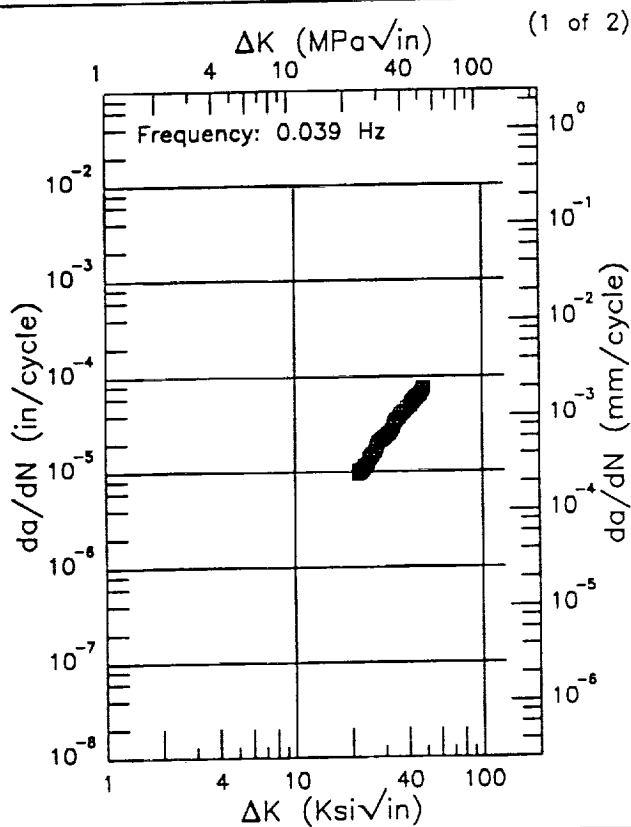
Yield Strength: 67. ksi

Ult. Strength: 87.9 ksi

Specimen Thk: 1 in.

Specimen Width: 2 in.

Ref: EPMEA



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
21.56 (min)	9.15
25.	14.0
30.	23.6
35.	35.4
40.	48.5
48.18 (max)	73.4

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
11.84 (min)	1.11
13.	1.71
16.	3.82
20.	5.53
21.10 (max)	6.55

RMS %  
Error  
3.64

Life Prediction Ratio Summary

0. .5 .8 1.25 2.---

RMS %  
Error  
4.25

Life Prediction Ratio Summary

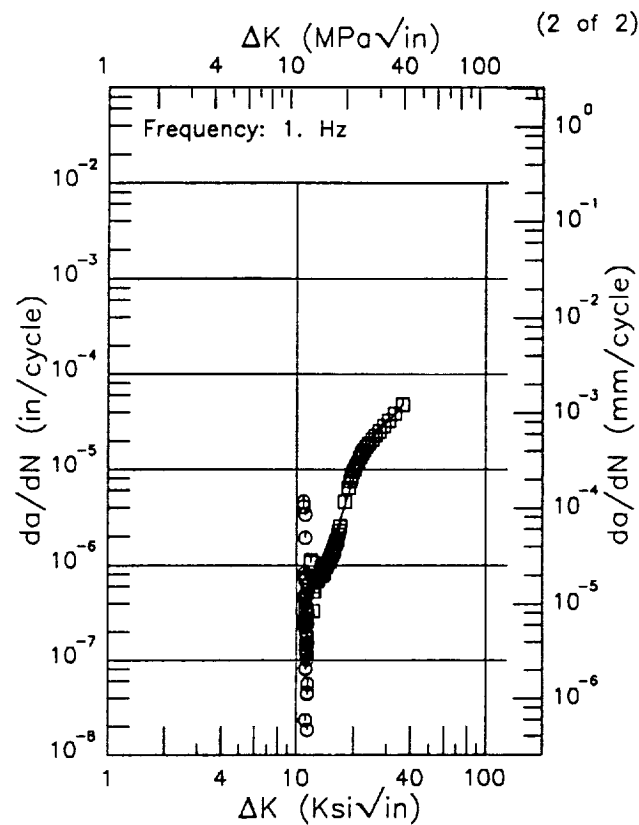
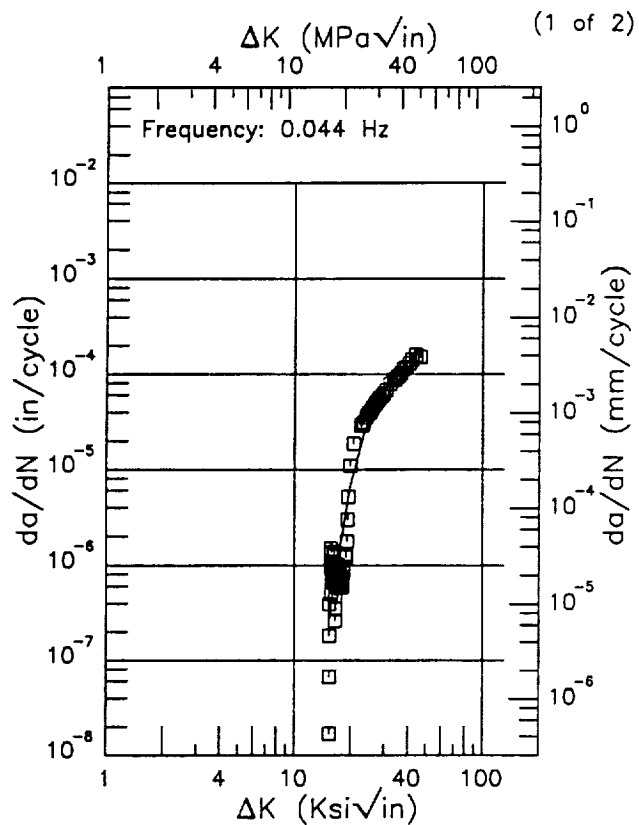
0. .5 .8 1.25 2.---



F | A508 |

Condition/Ht: -99  
 Form:  
 Specimen Type: CT  
 Orientation: T-L  
 Stress Ratio: 0.2  
 Environment: PWR WATER;199°F

Yield Strength: 67. ksi  
 Ult. Strength: 87.9 ksi  
 Specimen Thk: 1 in.  
 Specimen Width: 2 in.  
 Ref: EPNRF;EPCUL



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
15.34 (min)	0.276
16.	0.515
20.	7.45
25.	39.6
30.	79.0
35.	96.1
40.	112.
46.33 (max)	190.

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
10.86 (min)	0.527
13.	0.613
16.	1.94
20.	8.36
25.	21.4
30.	31.1
35.	42.9
36.19 (max)	48.5

RMS %  
 Error  
 78.14

Life Prediction Ratio Summary  
  
 0. .5 .8 1.25 2.

RMS %  
 Error  
 >100.0

Life Prediction Ratio Summary  
  
 0. .5 .8 1.25 2.

B1-90

R A508

Condition/Ht: -99

Form:

Specimen Type: CT

Orientation:

Frequency: 0. Hz

Environment: PWR WATER;550°F

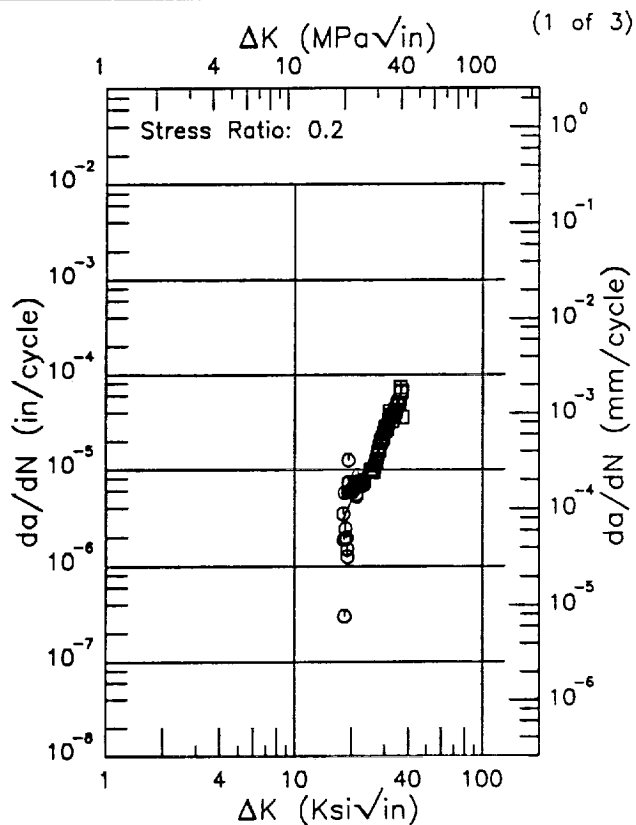
Yield Strength: 56.6 ksi

Ult. Strength: 81.2 ksi

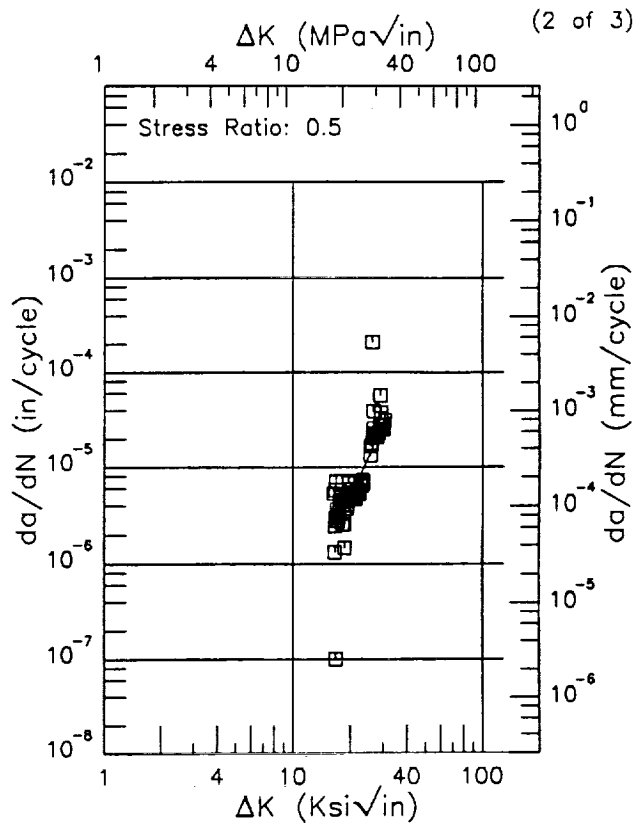
Specimen Thk: 0.984 in.

Specimen Width: 1.969 in.

Ref: EPUK0



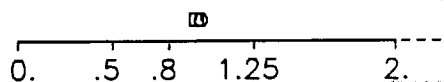
$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
18.01 (min)	3.02
20.	4.72
25.	10.6
30.	22.0
35.	49.3
37.21 (max)	73.6



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
16.36 (min)	3.31
20.	4.71
25.	12.3
30.	29.1
30.34 (max)	29.3

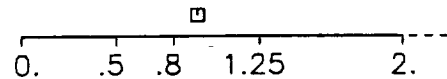
RMS %  
Error  
35.61

Life Prediction Ratio Summary



RMS %  
Error  
>100.0

Life Prediction Ratio Summary



PAGE B1-90 INTENTIONALLY BLANK B1-91

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Condition/Ht: -99

Form:

Specimen Type: CT

Orientation:

Frequency: 0. Hz

Environment: PWR WATER;550°F

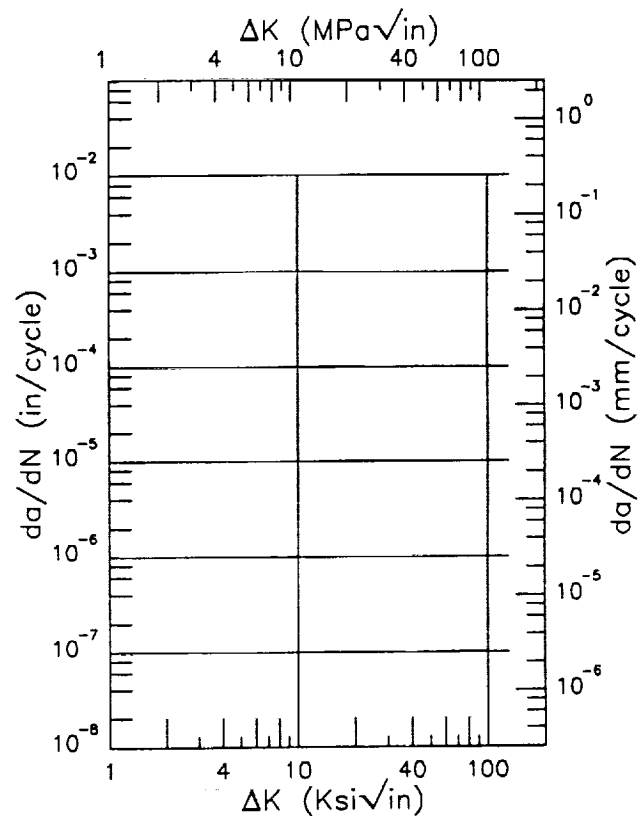
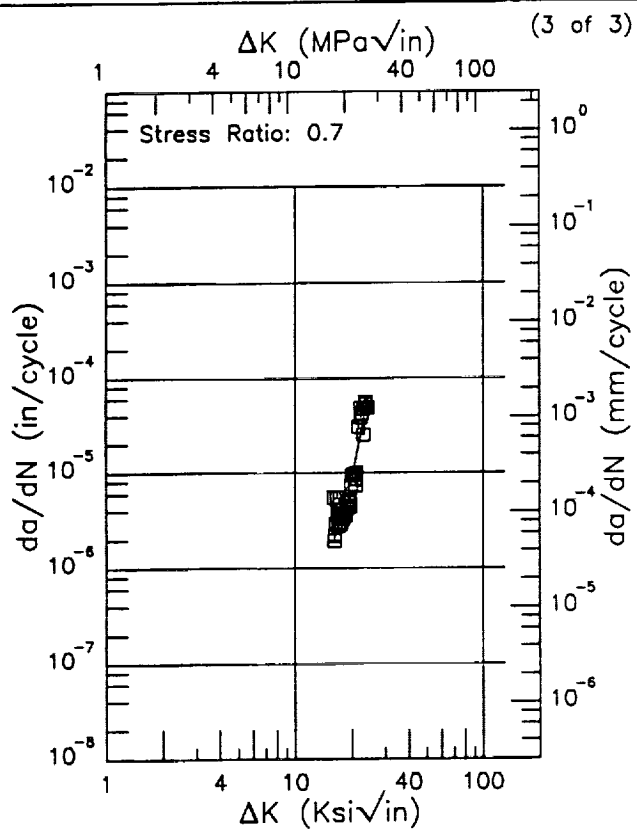
Yield Strength: 56.6 ksi

Ult. Strength: 81.2 ksi

Specimen Thk: 0.984 in.

Specimen Width: 1.969 in.

Ref: EPUK0

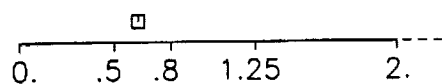


$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
15.90 (min)	4.45
16.	4.14
20.	8.53
24.17 (max)	64.2

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
--------------------------------------	-----------------------------------

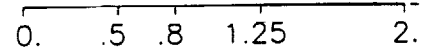
RMS %  
Error  
39.97

Life Prediction Ratio Summary



RMS %  
Error

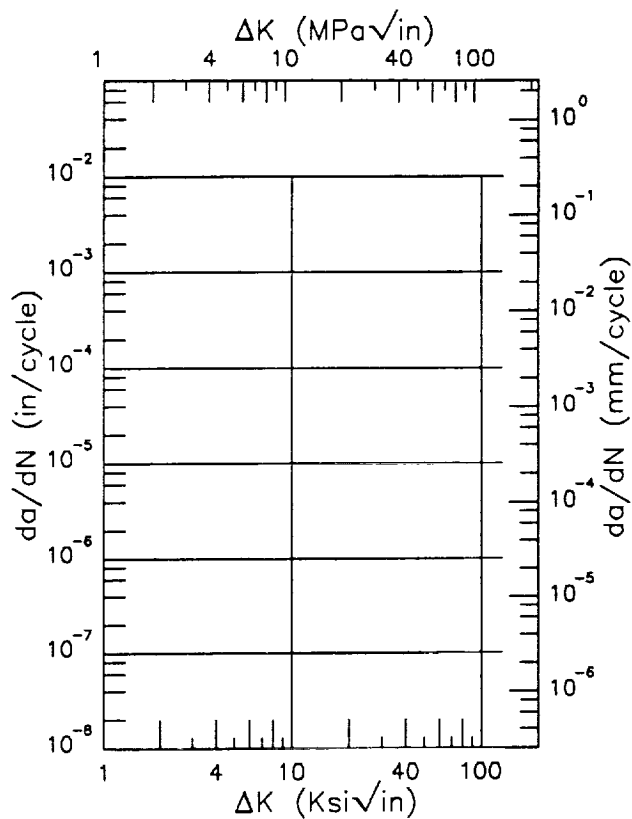
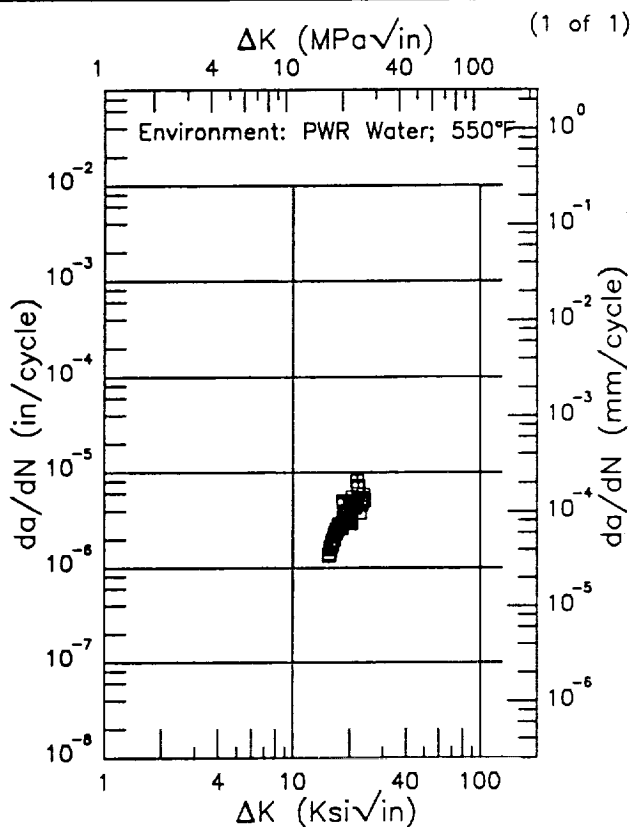
Life Prediction Ratio Summary



E | A508 |

Condition/Ht: -99  
 Form:  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.7  
 Frequency: 1 Hz

Yield Strength: 56.6 ksi  
 Ult. Strength: 81.2 ksi  
 Specimen Thk: 0.984 in.  
 Specimen Width: 1.969 in.  
 Ref: EPUK0



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
15.47 (min)	1.47
16.	1.80
20.	4.03
23.67 (max)	5.65

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
--------------------------------------	-------------------------------

RMS %  
 Error  
 19.15

Life Prediction Ratio Summary  
  
 0. .5 .8 1.25 2.

RMS %  
 Error

Life Prediction Ratio Summary  
  
 0. .5 .8 1.25 2.

Condition/Ht: -99

Form:

Specimen Type: CT

Orientation:

Stress Ratio: 0.8

Environment: PWR WATER;550°F

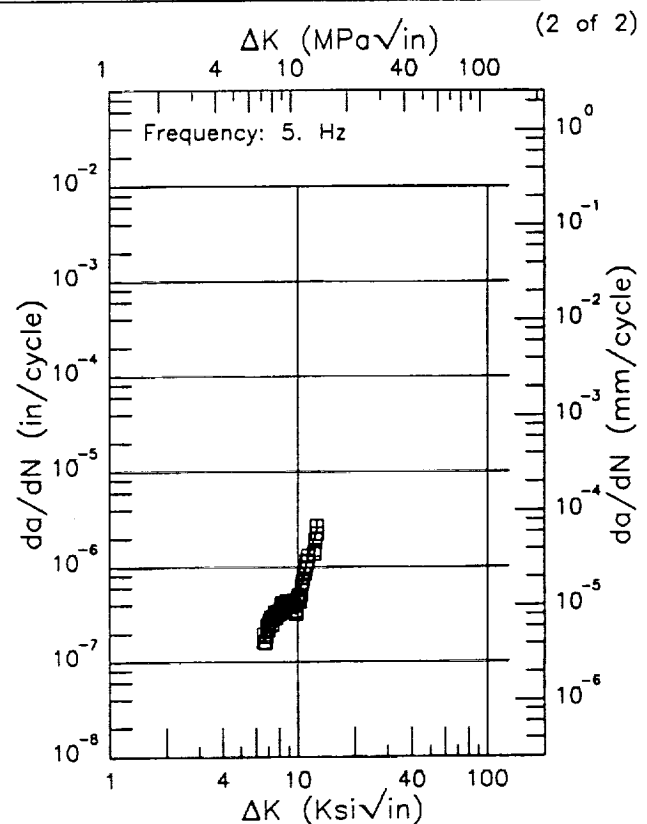
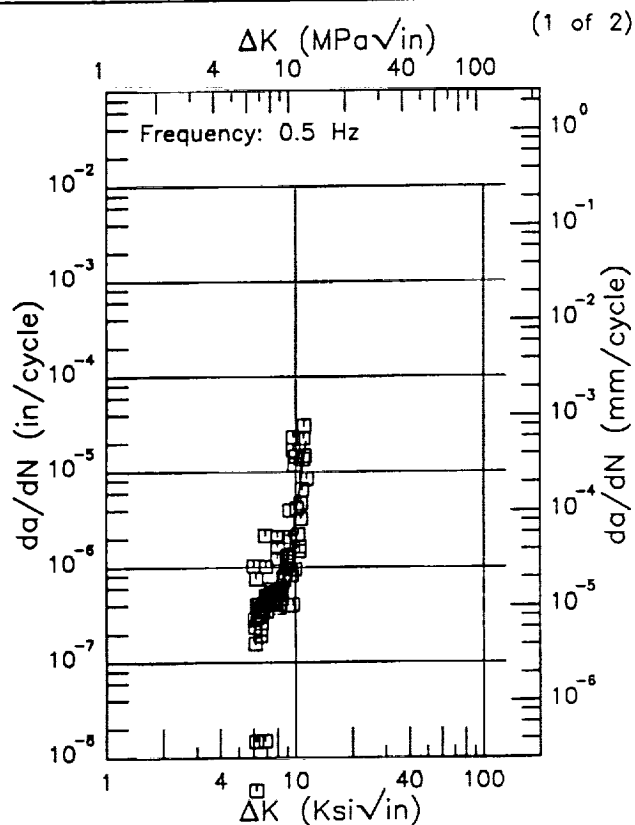
Yield Strength: 56.6 ksi

Ult. Strength: 81.2 ksi

Specimen Thk: 0.984 in.

Specimen Width: 1.969 in.

Ref: EPUK0

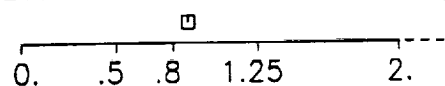


$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
5.99 (min)	0.311
6.	0.307
7.	0.396
8.	0.548
9.	1.08
10.	3.67
11.34 (max)	21.2

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
6.56 (min)	0.172
7.	0.234
8.	0.335
9.	0.409
10.	0.529
12.66 (max)	2.65

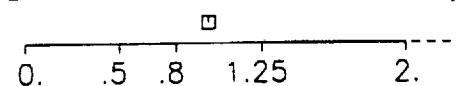
RMS %  
Error  
>100.0

Life Prediction Ratio Summary



RMS %  
Error  
13.07

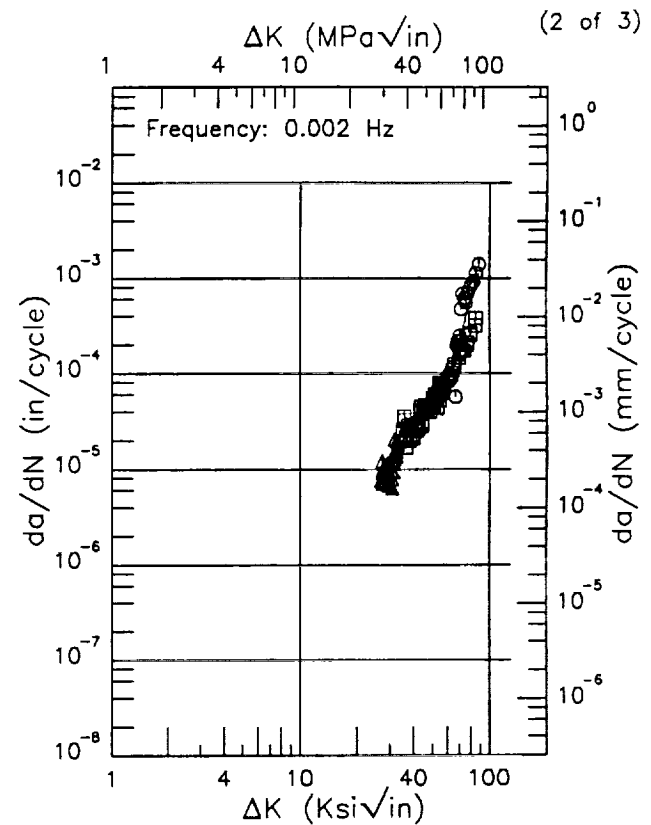
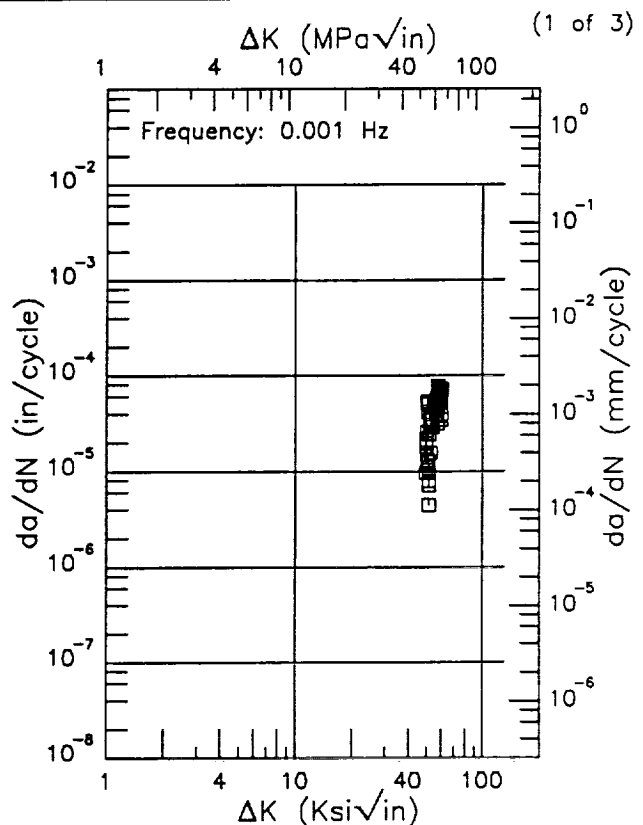
Life Prediction Ratio Summary



F | A508 |

Condition/Ht: -99  
 Form:  
 Specimen Type: CT  
 Orientation: T-L  
 Stress Ratio: 0.1  
 Environment: PWR WATER;550°F

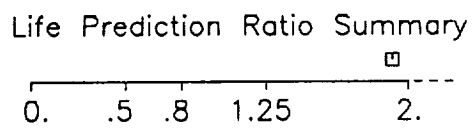
Yield Strength: 67. ksi  
 Ult. Strength: 87.9 ksi  
 Specimen Thk: 2 in.  
 Specimen Width: 5.1 in.  
 Ref: EPCUL;EPMEA



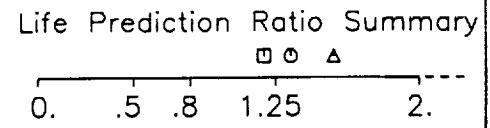
$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
49.40 (min)	15.7
50.	22.2
60.	58.1
60.49 (max)	50.6

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
26.72 (min)	7.52
30.	11.6
35.	20.3
40.	30.2
50.	47.1
60.	87.0
70.	226.
80.	617.
87.54 (max)	1130.

RMS %  
 Error  
 39.70



RMS %  
 Error  
 27.97



Condition/Ht: -99

Form:

Specimen Type: CT

Orientation: T-L

Stress Ratio: 0.1

Environment: PWR WATER;550°F

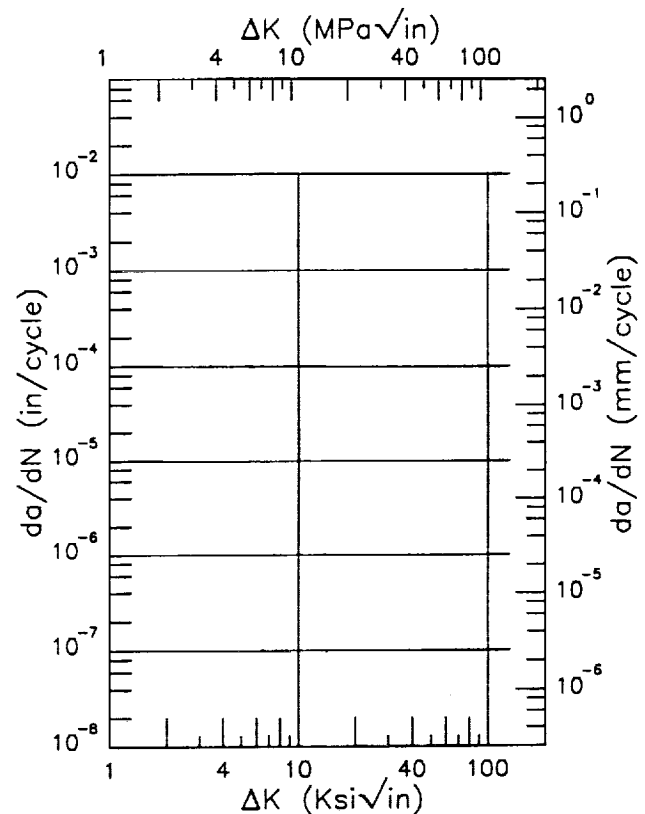
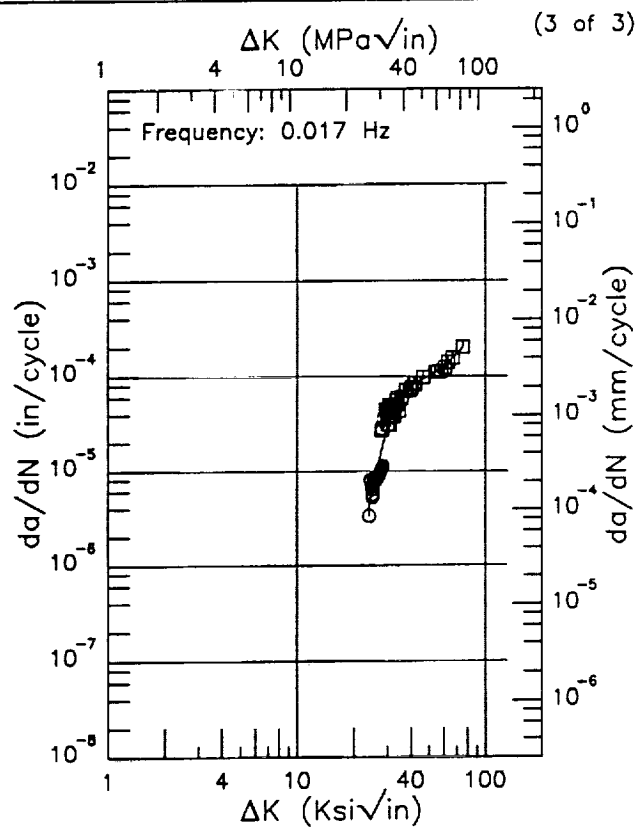
Yield Strength: 67. ksi

Ult. Strength: 87.9 ksi

Specimen Thk: 2 in.

Specimen Width: 5.1 in.

Ref: EPCUL;EPMEA

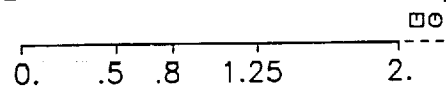


$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
23.91 (min)	3.98
25.	6.66
30.	30.3
35.	60.2
40.	80.7
50.	99.7
60.	125.
70.	171.
75.14 (max)	200.

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
--------------------------------------	-----------------------------------

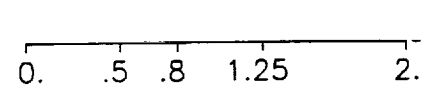
RMS %  
Error  
29.92

Life Prediction Ratio Summary



RMS %  
Error

Life Prediction Ratio Summary





F | A508 |

Condition/Ht: -99

Form:

Specimen Type: CT

Orientation: T-L

Stress Ratio: 0.2

Environment: PWR WATER;550°F

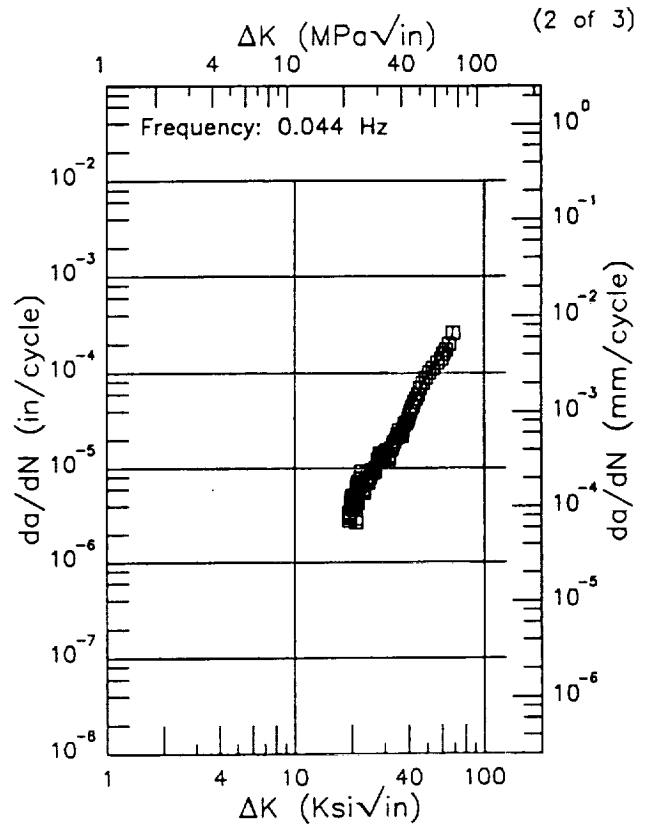
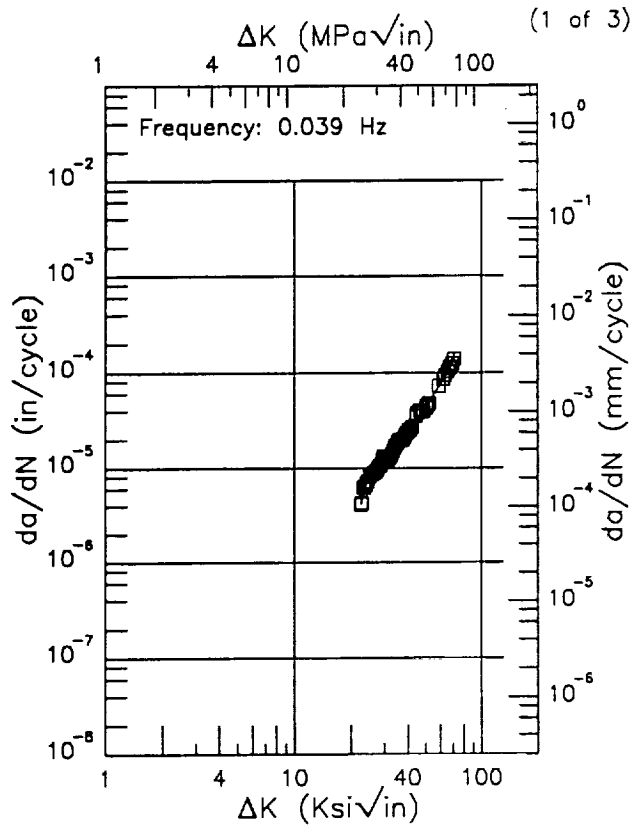
Yield Strength: 67. ksi

Ult. Strength: 87.9 ksi

Specimen Thk: 2 in.

Specimen Width: 5.1 in.

Ref: EPNRF;EPCUL

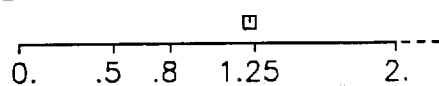


ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
22.53 (min)	5.07
25.	7.77
30.	12.2
35.	16.8
40.	24.3
50.	44.5
60.	75.0
70.	128.
70.77 (max)	131.

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
19.27 (min)	3.31
20.	4.00
25.	8.76
30.	13.5
35.	21.1
40.	36.3
50.	92.7
60.	147.
68.31 (max)	255.

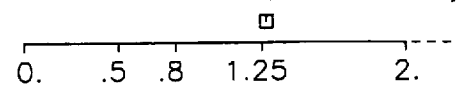
RMS %  
Error  
6.21

Life Prediction Ratio Summary



RMS %  
Error  
13.63

Life Prediction Ratio Summary



Condition/Ht: -99

Form:

Specimen Type: CT

Orientation: T-L

Stress Ratio: 0.2

Environment: PWR WATER;550°F

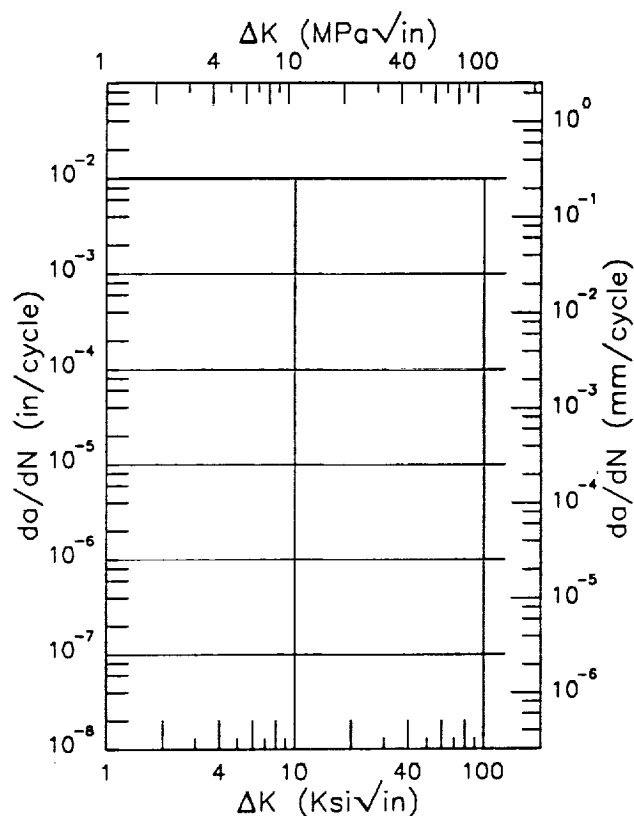
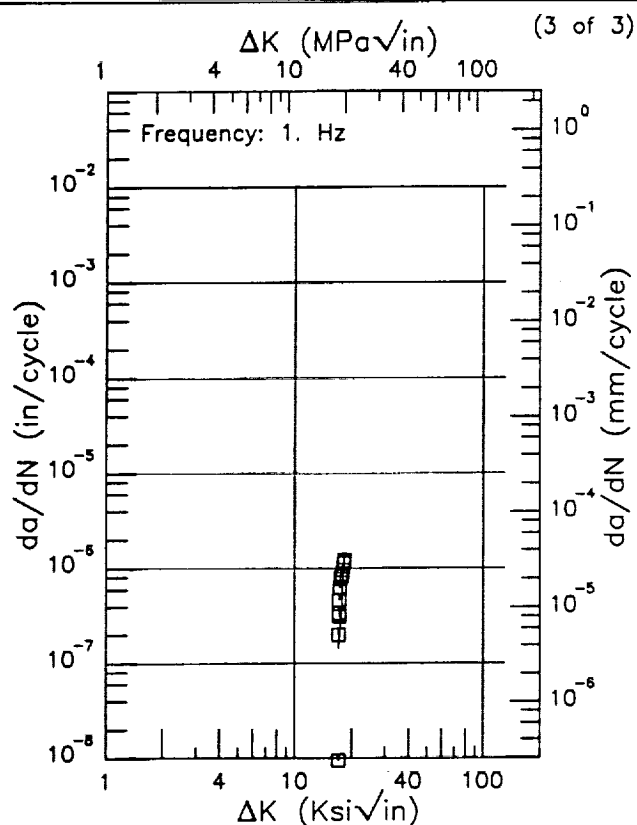
Yield Strength: 67. ksi

Ult. Strength: 87.9 ksi

Specimen Thk: 2 in.

Specimen Width: 5.1 in.

Ref: EPNRF;EPCUL



$\Delta K$  (Ksi $\sqrt{\text{in}}$ )      da/dN (10<sup>-6</sup>in/cycle)

16.98 (min)              0.145

18.25 (max)              1.41

$\Delta K$  (Ksi $\sqrt{\text{in}}$ )      da/dN (10<sup>-6</sup>in/cycle)

RMS %  
Error  
98.92

Life Prediction Ratio Summary

0.   .5   .8   1.25   2.

RMS %  
Error

Life Prediction Ratio Summary

0.   .5   .8   1.25   2.

E | A508 |

Condition/Ht: -99

Form:

Specimen Type: CT

Orientation:

Stress Ratio: 0.

Frequency: 0.8 Hz

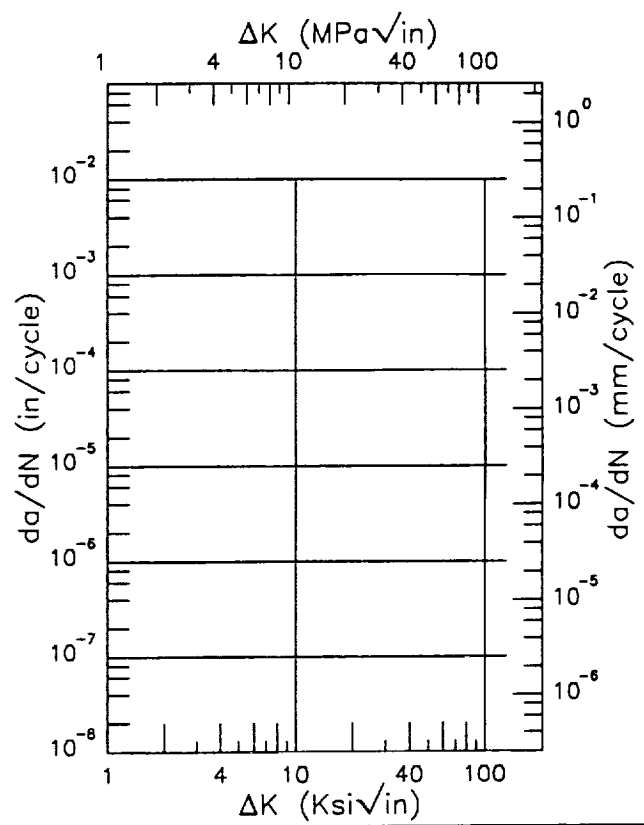
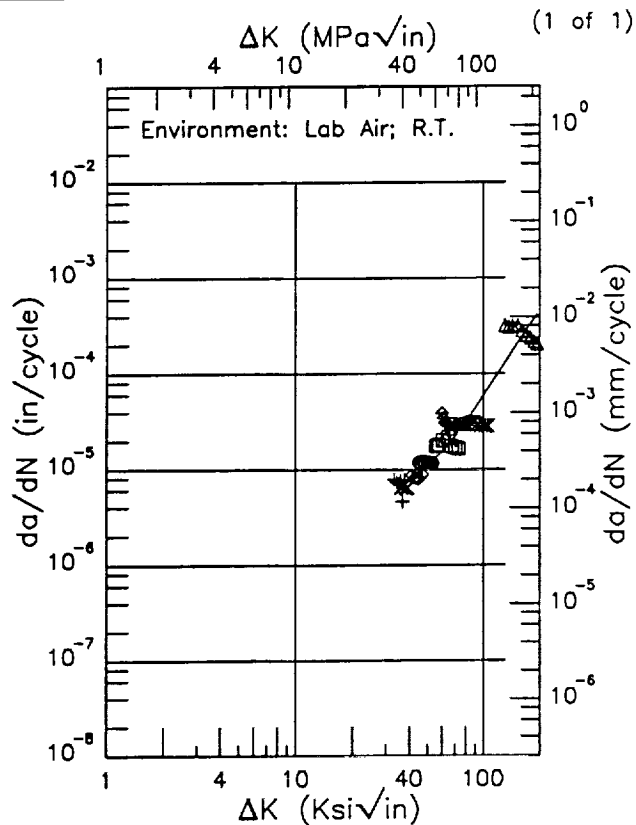
Yield Strength: 62.6 ksi

Ult. Strength: 89.1 ksi

Specimen Thk: 0.3 in.

Specimen Width: 2.48 in.

Ref: EPBAP



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
33.20 (min)	7.18
35.	7.34
40.	8.11
50.	11.0
60.	15.7
70.	22.4
80.	31.7
90.	43.9
100.	59.5
130.	130.
160.	242.
194.04 (max)	418.

$\Delta K$  (Ksi $\sqrt{\text{in}}$ )       $da/dN$  ( $10^{-6}$  in/cycle)

RMS %  
Error  
46.82

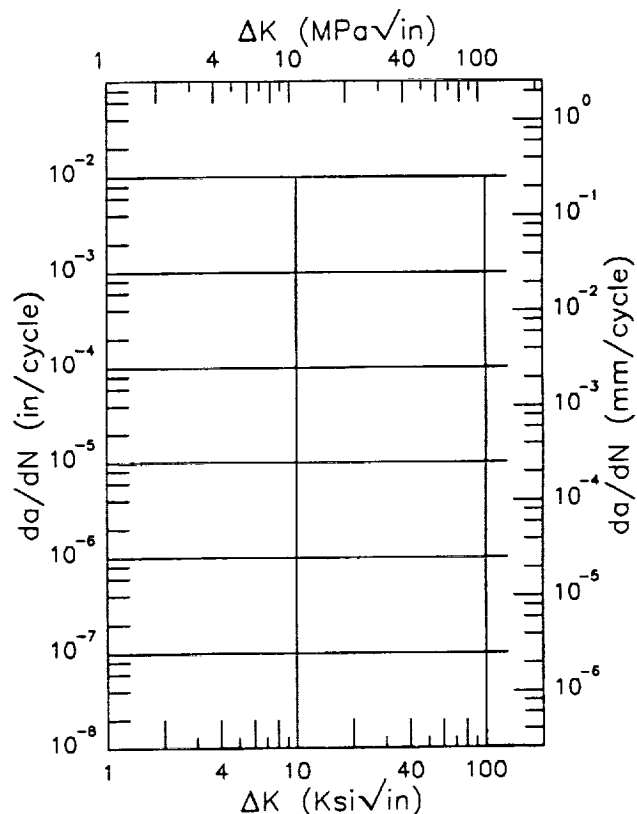
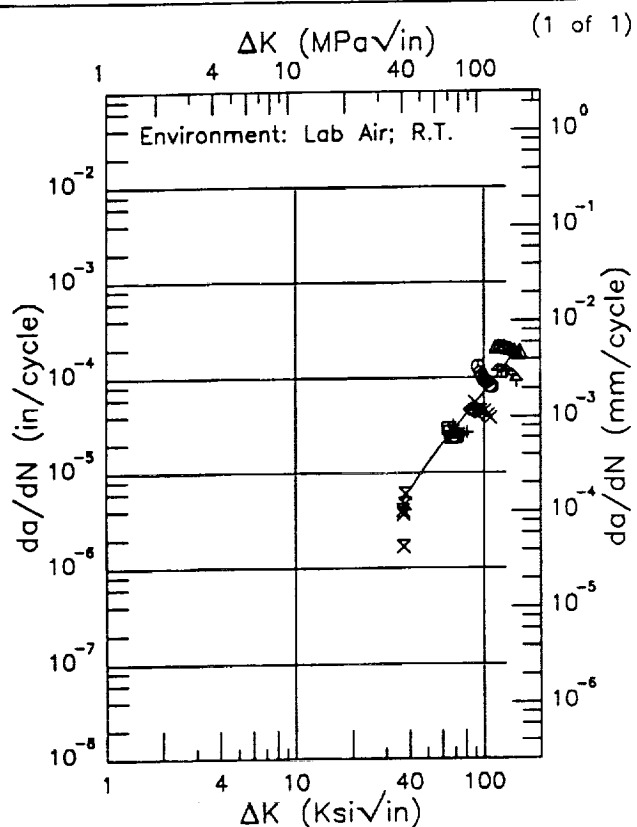
Life Prediction Ratio Summary  
x o x o o Δ +  
0. .5 .8 1.25 2.

RMS %  
Error

Life Prediction Ratio Summary  
0. .5 .8 1.25 2.

Condition/Ht: -99  
 Form:  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.  
 Frequency: 0.8 Hz

Yield Strength: 62.6 ksi  
 Ult. Strength: 89.1 ksi  
 Specimen Thk: 0.3 in.  
 Specimen Width: 2.48 in.  
 Ref: EPBAP

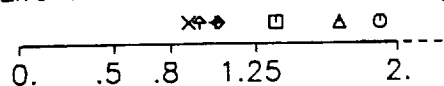


$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
36.77 (min)	5.11
40.	6.60
50.	12.4
60.	20.2
70.	29.8
80.	41.5
90.	55.4
100.	71.7
130.	138.
156.13 (max)	222.

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
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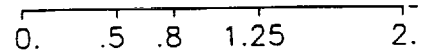
RMS %  
 Error  
 40.05

Life Prediction Ratio Summary



RMS %  
 Error

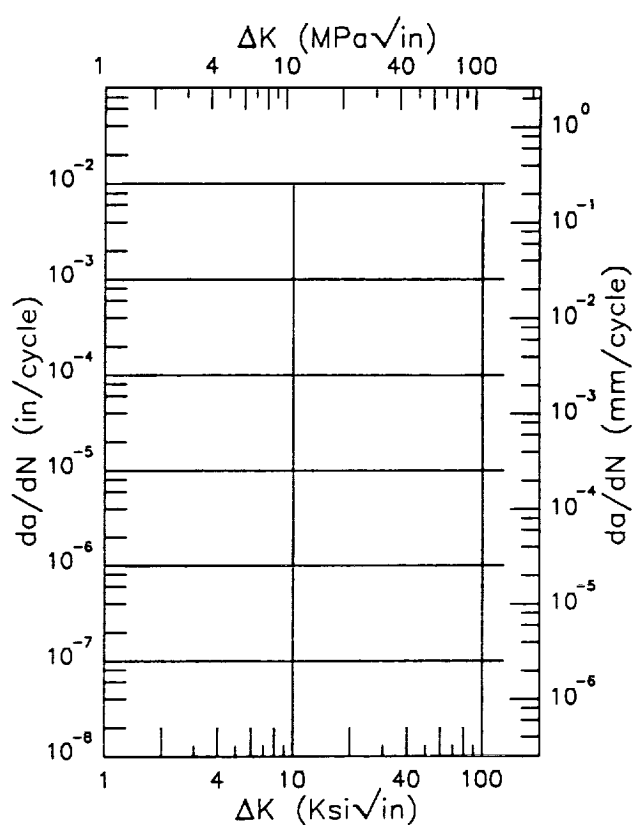
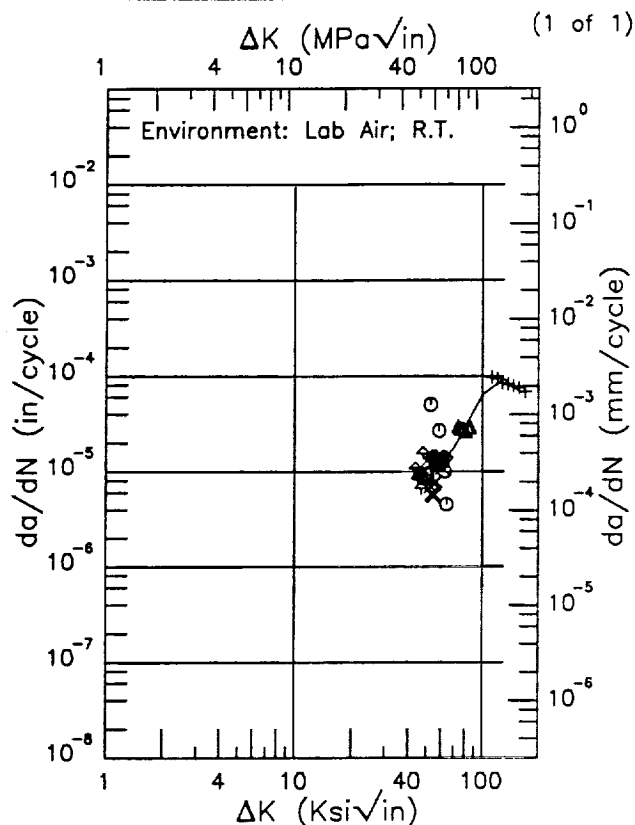
Life Prediction Ratio Summary



E | A508 |

Condition/Ht: -99  
 Form:  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.  
 Frequency: 0.8 Hz

Yield Strength: 62.6 ksi  
 Ult. Strength: 89.1 ksi  
 Specimen Thk: 0.3 in.  
 Specimen Width: 2.48 in.  
 Ref: EPBAP



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
43.52 (min)	9.08
50.	9.51
60.	12.2
70.	17.8
80.	28.0
90.	43.9
100.	63.4
130.	93.6
160.	67.2
168.68 (max)	68.9

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
--------------------------------------	-------------------------------

RMS %  
 Error  
 63.73

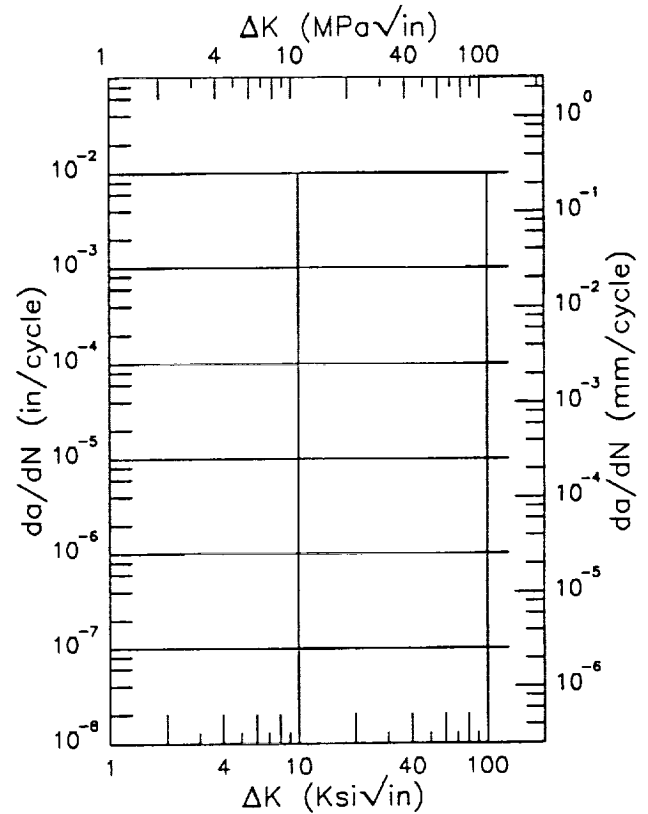
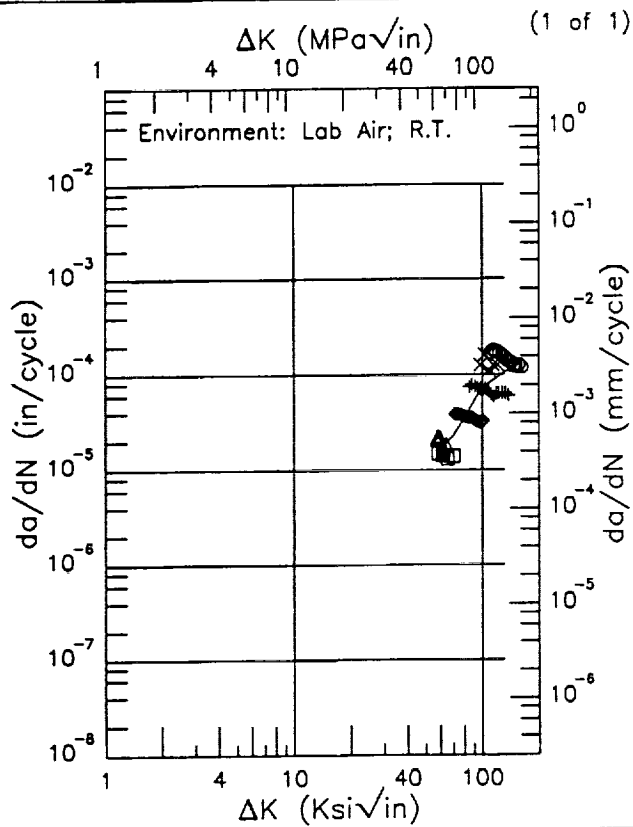
Life Prediction Ratio Summary  
 x □ x ◇ △ ○  
 0. .5 .8 1.25 2.

RMS %  
 Error

Life Prediction Ratio Summary  
 0. .5 .8 1.25 2.

Condition/Ht: -99  
 Form:  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.  
 Frequency: 0.8 Hz

Yield Strength: 62.6 ksi  
 Ult. Strength: 89.1 ksi  
 Specimen Thk: 0.3 in.  
 Specimen Width: 2.48 in.  
 Ref: EPBAP

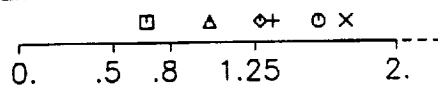


$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
56.80 (min)	16.1
60.	16.6
70.	22.8
80.	35.1
90.	52.7
100.	72.7
130.	104.
160.	131.
160.91 (max)	133.

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
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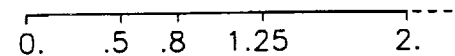
RMS %  
 Error  
 44.23

Life Prediction Ratio Summary



RMS %  
 Error

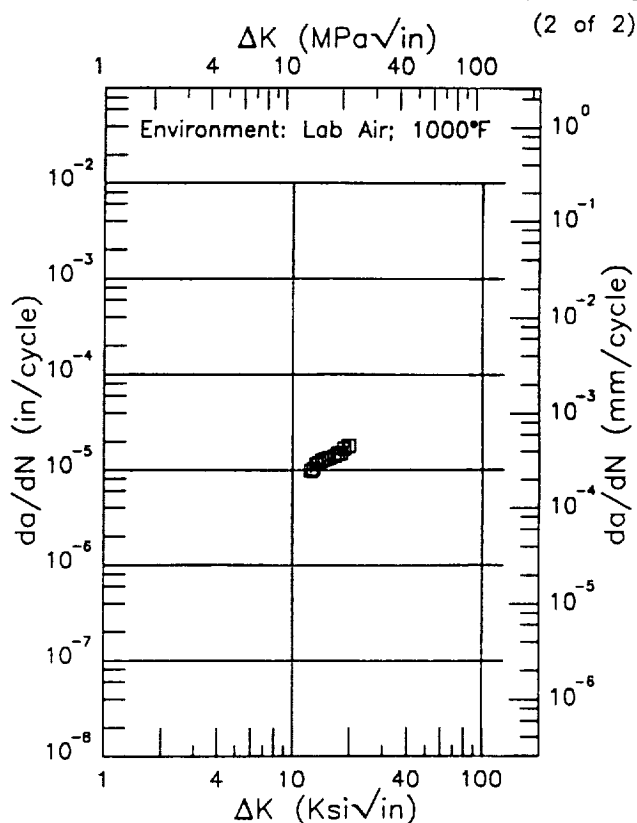
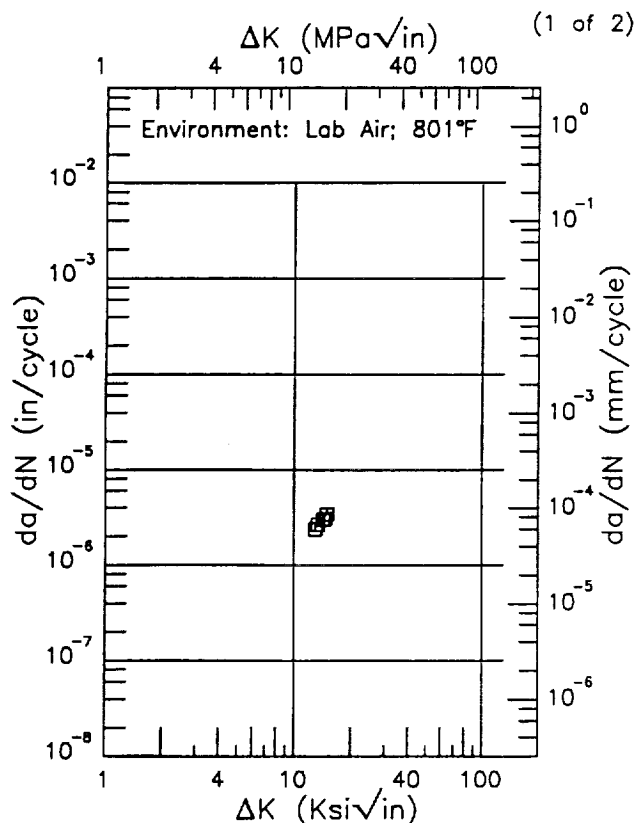
Life Prediction Ratio Summary



E | A516 |

Condition/Ht: -99  
 Form: Plate  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.05  
 Frequency: 0.7 Hz

Yield Strength: 33.8 ksi  
 Ult. Strength: 51.6 ksi  
 Specimen Thk: 0.417 - 0.419 in.  
 Specimen Width: 2 - 2.001 in.  
 Ref: EPWST



$\Delta K$  (Ksi√in)       $da/dN$  ( $10^{-6}$  in/cycle)

$\Delta K$  (Ksi√in)       $da/dN$  ( $10^{-6}$  in/cycle)

12.55 (min)	9.60
13.	10.6
16.	13.5
19.73 (max)	17.6

RMS %  
Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.---

RMS %  
Error

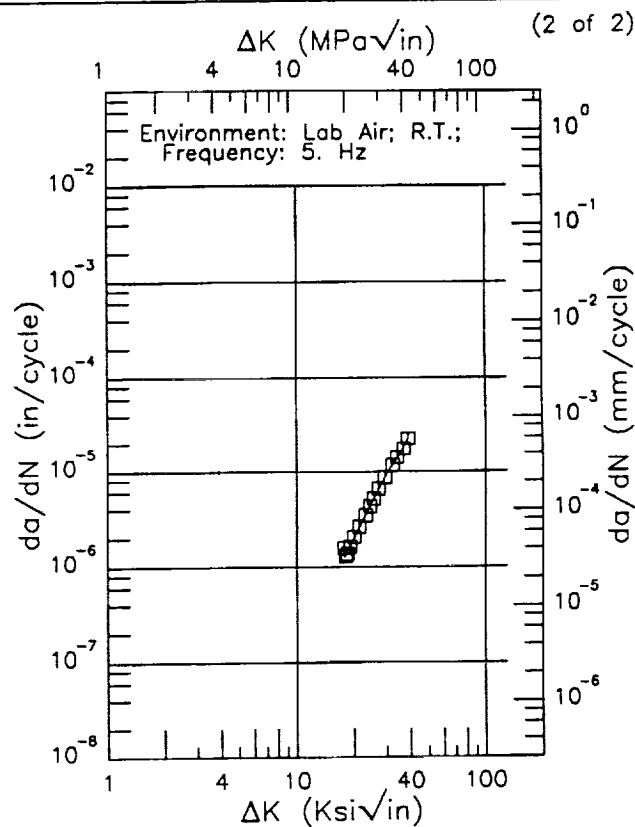
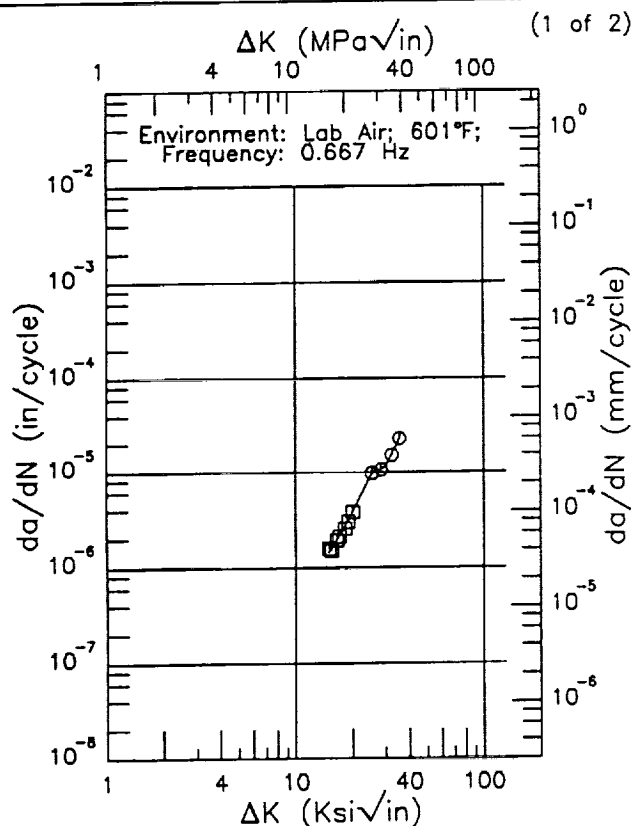
2.67

Life Prediction Ratio Summary

0. .5 .8 1.25 2.---

Condition/Ht: -99  
 Form: Plate  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.05

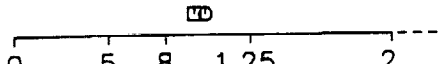
Yield Strength: 33.8 ksi  
 Ult. Strength: 51.6 ksi  
 Specimen Thk: 0.43 - 0.433 in.  
 Specimen Width: 1.999 - 2.001 in.  
 Ref: EPWST



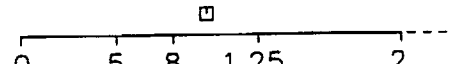
$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
14.91 (min)	1.44
16.	1.75
20.	3.74
25.	9.46
30.	11.5
35.	21.9
35.34 (max)	22.8

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
17.79 (min)	1.27
20.	1.94
25.	4.74
30.	9.33
35.	15.0
38.61 (max)	22.4

RMS %  
 Error  
 3.93

Life Prediction Ratio Summary  


RMS %  
 Error  
 6.89

Life Prediction Ratio Summary  




F | A516 |

Condition/Ht: -99

Form:

Specimen Type: CT

Orientation: L-T

Stress Ratio: 0.2

Environment: PWR WATER;550°F

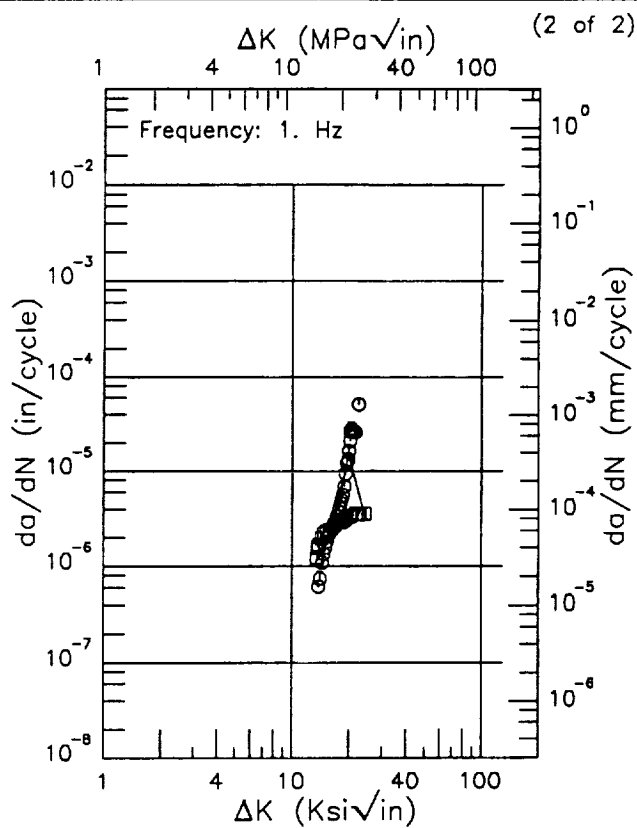
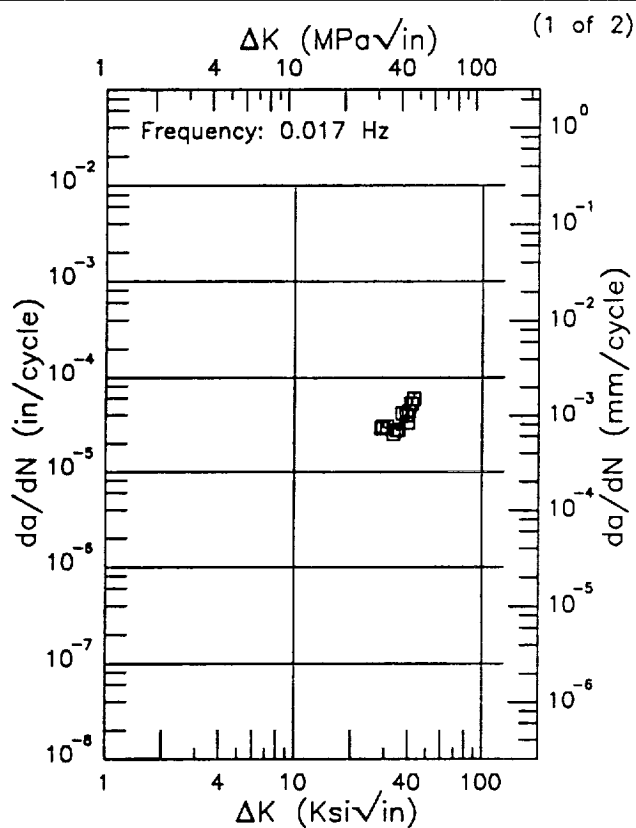
Yield Strength:

Ult. Strength:

Specimen Thk: 1 in.

Specimen Width: 2 in.

Ref: EPCUL



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
28.64 (min)	31.4
30.	29.0
35.	28.7
40.	44.8
42.79 (max)	56.1

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
13.58 (min)	1.13
16.	2.44
20.	15.0
24.08 (max)	3.60

RMS %  
Error  
10.70

Life Prediction Ratio Summary

RMS %  
Error  
>100.0

Life Prediction Ratio Summary

Condition/Ht: -99

Form:

Specimen Type: CT

Orientation: T-S

Frequency: 0. Hz

Environment: PWR WATER;550°F

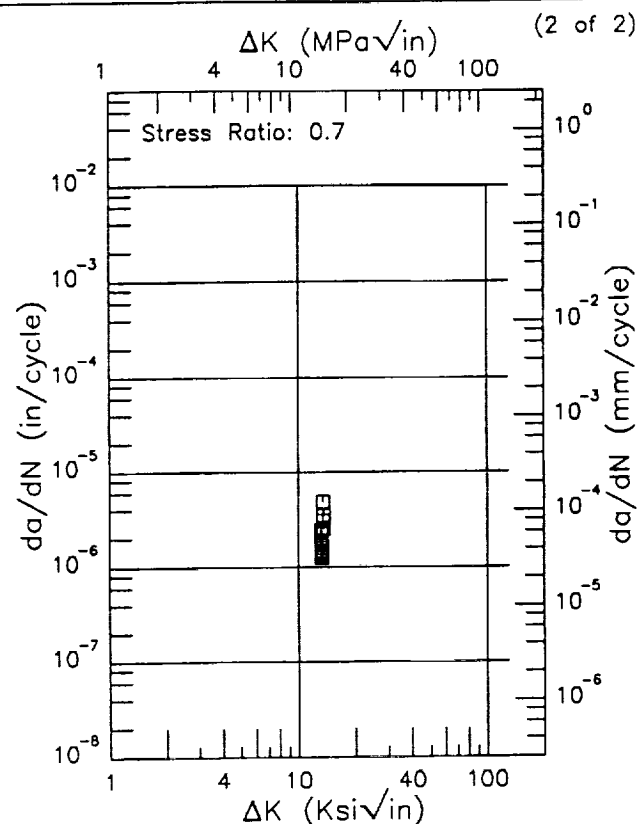
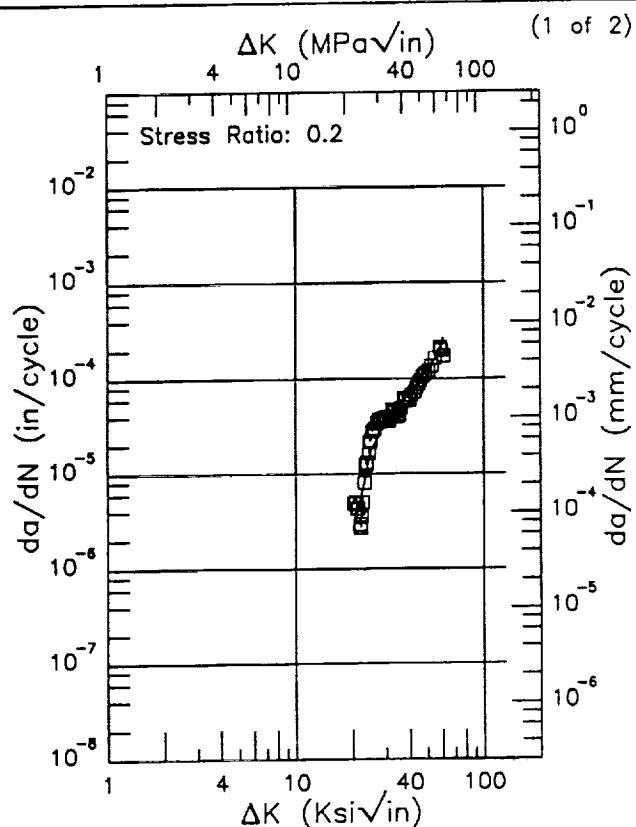
Yield Strength:

Ult. Strength:

Specimen Thk: 2 in.

Specimen Width: 4 in.

Ref: EPCUL

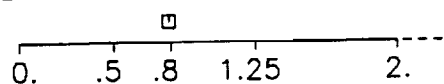


ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
20.18 (min)	2.60
25.	17.4
30.	39.2
35.	55.6
40.	68.0
50.	108.
60.	244.
60.89 (max)	267.

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
13.11 (min)	2.40
13.54 (max)	2.36

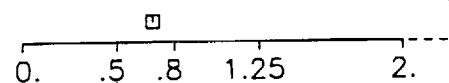
RMS %  
Error  
27.40

Life Prediction Ratio Summary



RMS %  
Error  
40.15

Life Prediction Ratio Summary



E | A516 |

Condition/Ht: -99

Form:

Specimen Type: CT

Orientation: T-S

Stress Ratio: 0.7

Frequency: 1 Hz

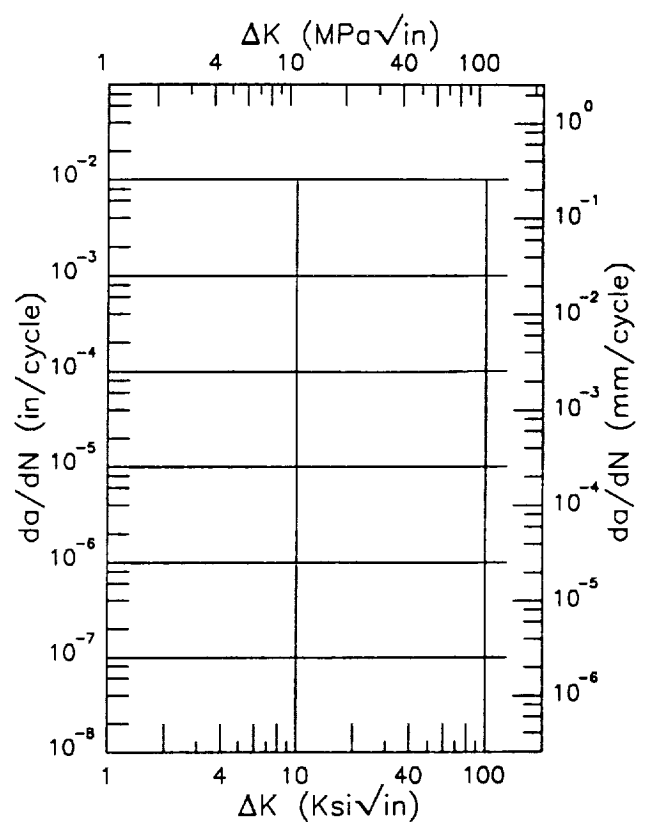
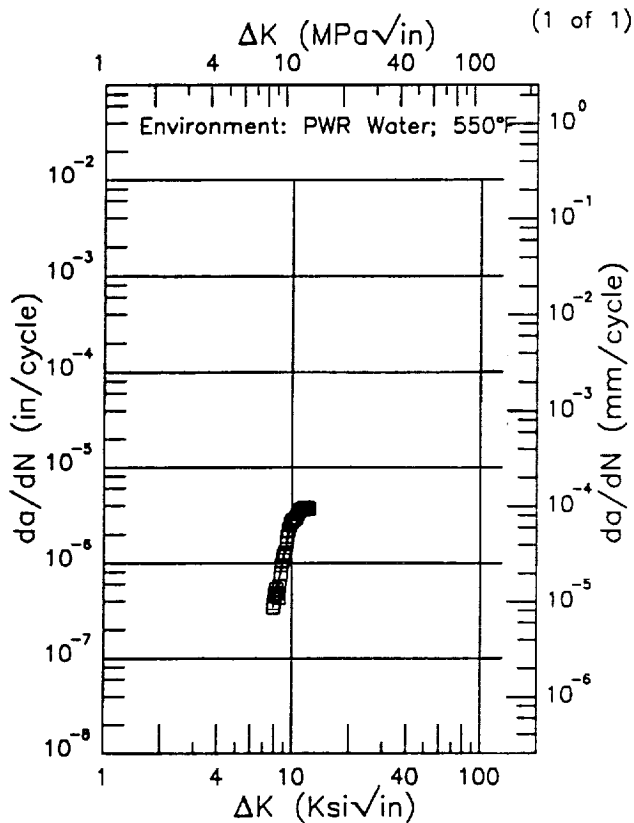
Yield Strength:

Ult. Strength:

Specimen Thk: 2 in.

Specimen Width: 4 in.

Ref: EPCUL



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ (10 <sup>-6</sup> in/cycle)
7.93 (min)	0.375
8.	0.390
9.	1.09
10.	2.80
12.17 (max)	4.00

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ (10 <sup>-6</sup> in/cycle)
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RMS %  
Error  
10.98

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS %  
Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

Condition/Ht: -99

Form:

Specimen Type: CT

Orientation: T-S

Stress Ratio: 0.2

Environment: PWR WATER;550°F

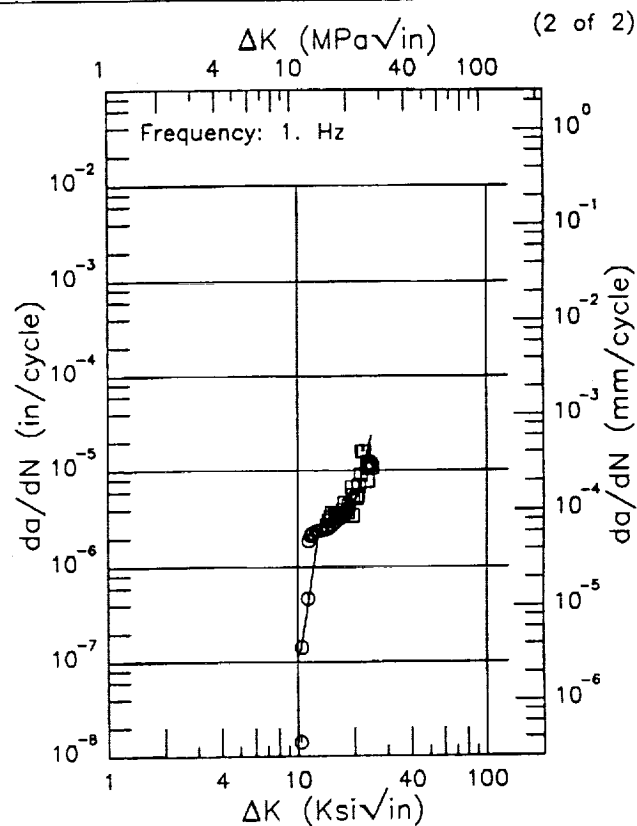
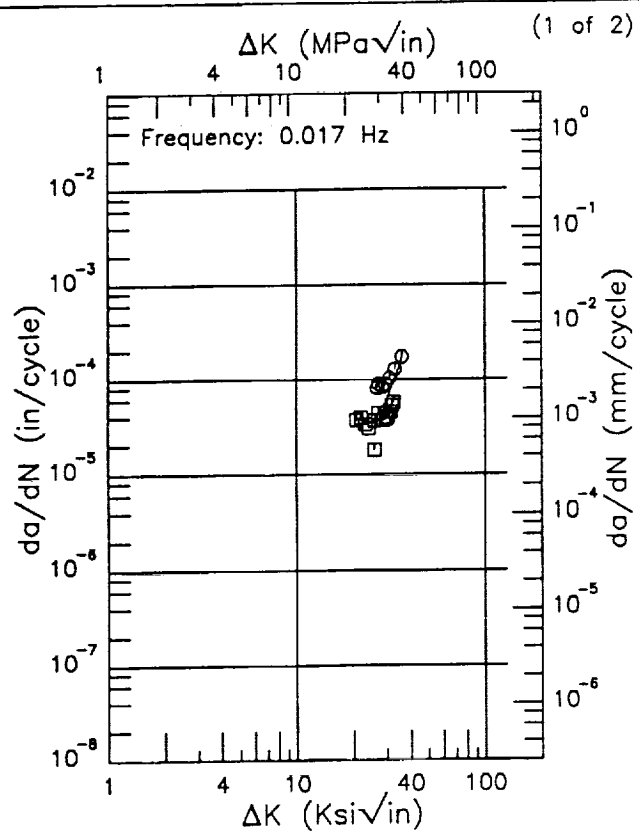
Yield Strength:

Ult. Strength:

Specimen Thk: 1 in.

Specimen Width: 2 in.

Ref: EPCUL

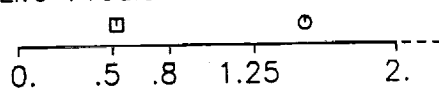


$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
20.57 (min)	39.0
25.	35.4
30.	61.2
35.	141.
35.94 (max)	167.

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
10.33 (min)	0.127
13.	2.40
16.	4.01
20.	4.88
24.61 (max)	23.5

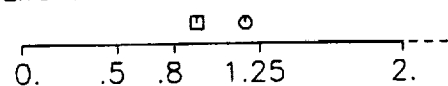
RMS %  
Error  
43.86

Life Prediction Ratio Summary



RMS %  
Error  
78.24

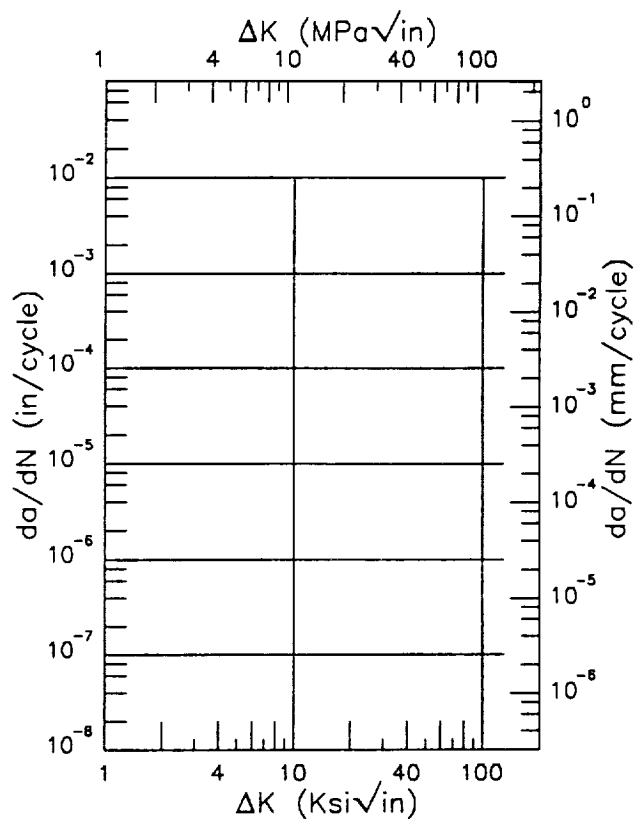
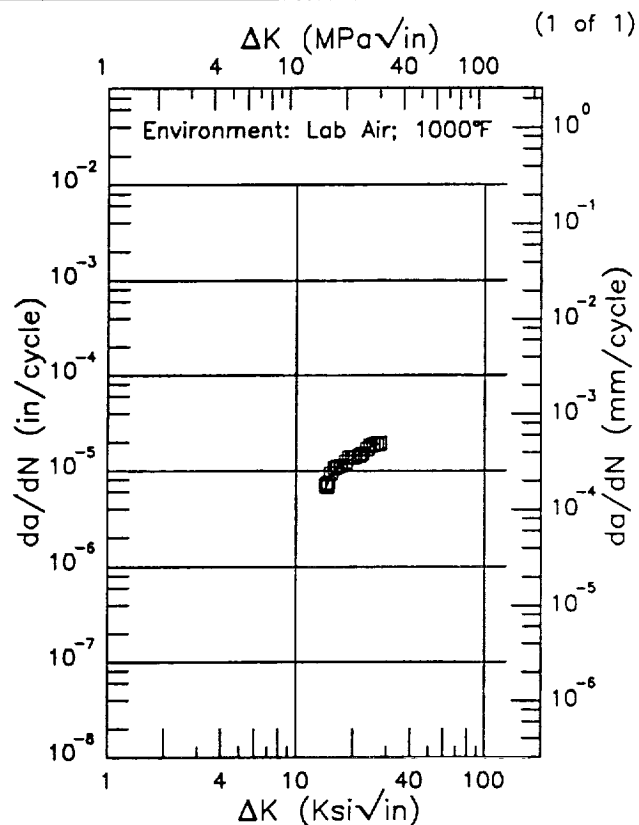
Life Prediction Ratio Summary



E | A516 |

Condition/Ht: -99  
 Form:  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.05  
 Frequency: 0.7 Hz

Yield Strength: 79.7 ksi  
 Ult. Strength: 76.7 ksi  
 Specimen Thk: 0.396 in.  
 Specimen Width: 1.998 in.  
 Ref: EPWST



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
14.20 (min)	6.50
16.	10.4
20.	13.5
25.	18.2
27.55 (max)	19.0

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
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RMS %  
 Error  
 4.05

Life Prediction Ratio Summary  

 0. .5 .8 1.25 2.

RMS %  
 Error

Life Prediction Ratio Summary  

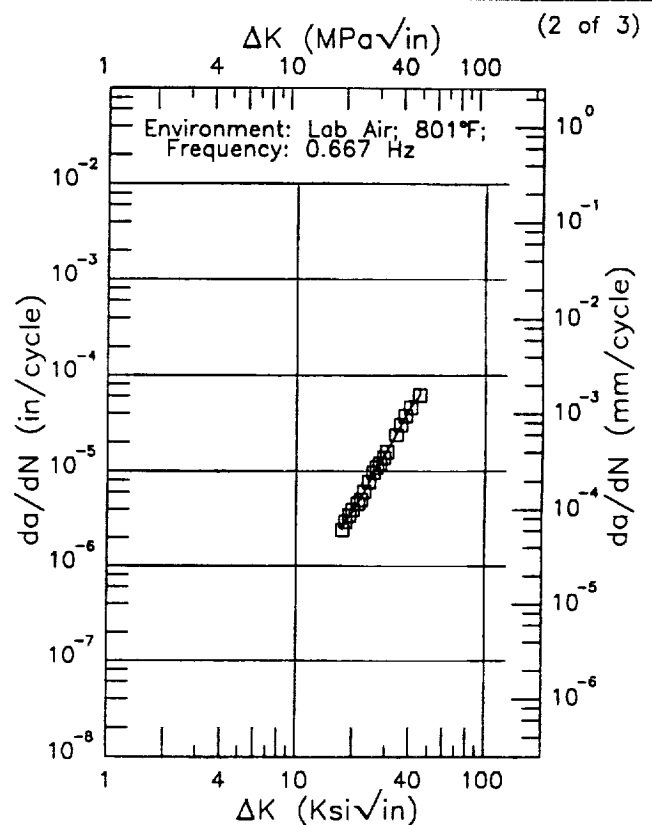
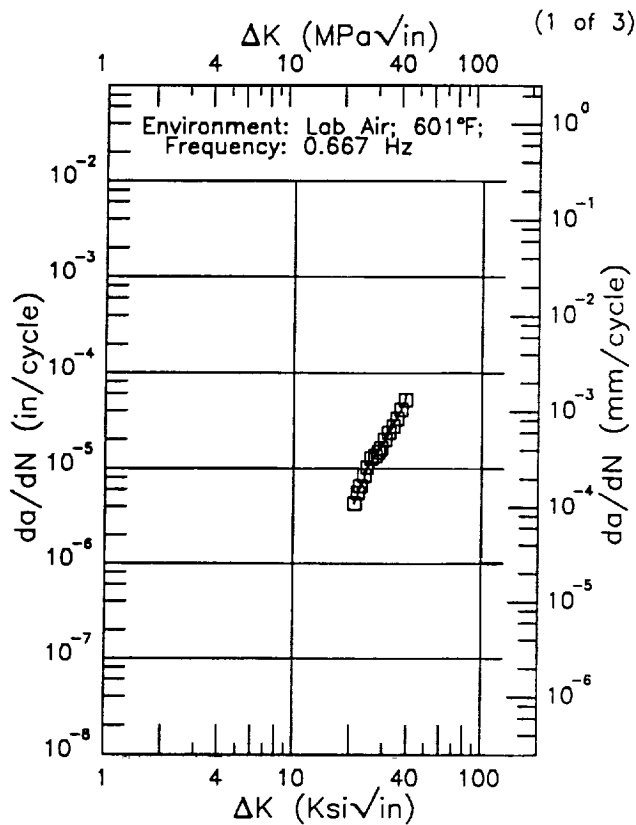
 0. .5 .8 1.25 2.

B1-110

EF A516

Condition/Ht: -99  
Form:  
Specimen Type: CT  
Orientation:  
Stress Ratio: 0.05

Yield Strength: 79.7 ksi  
Ult. Strength: 76.7 ksi  
Specimen Thk: 0.371 - 0.372 in.  
Specimen Width: 1.997 - 2 in.  
Ref: EPWST



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
20.94 (min)	4.33
25.	11.1
30.	18.3
35.	33.0
38.92 (max)	51.3

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
17.54 (min)	2.53
20.	3.77
25.	8.40
30.	15.4
35.	27.7
40.	44.8
44.51 (max)	60.7

RMS %  
Error  
3.10

Life Prediction Ratio Summary  
0. .5 .8 1.25 2.

RMS %  
Error  
3.24

Life Prediction Ratio Summary  
0. .5 .8 1.25 2.

Condition/Ht: -99

Form:

Specimen Type: CT

Orientation:

Stress Ratio: 0.05

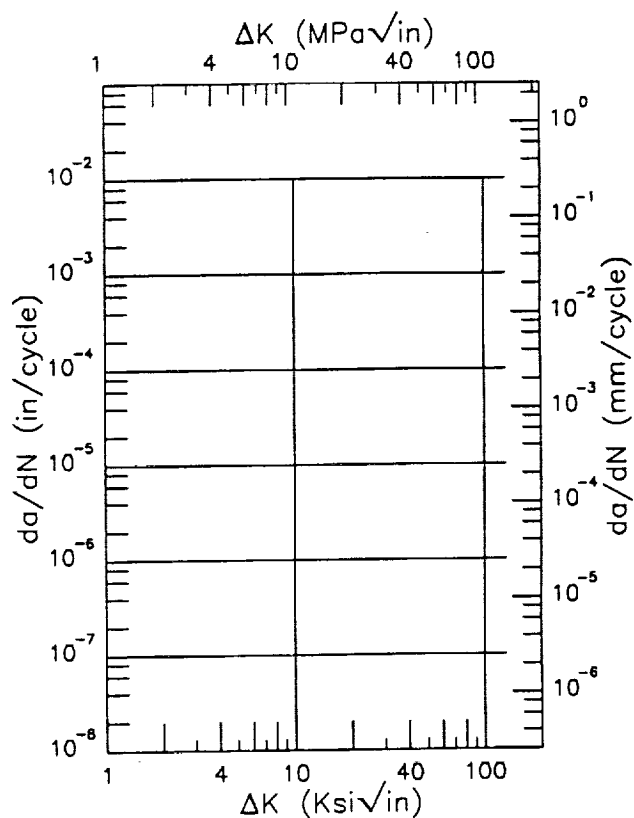
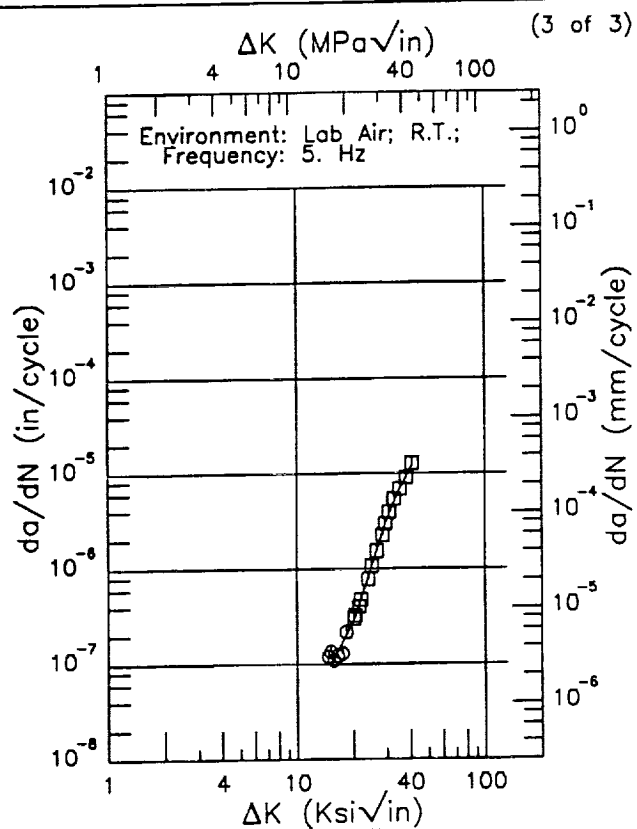
Yield Strength: 79.7 ksi

Ult. Strength: 76.7 ksi

Specimen Thk: 0.371 - 0.372 in.

Specimen Width: 1.997 - 2 in.

Ref: EPWST



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
14.55 (min)	0.116
16.	0.124
20.	0.286
25.	1.08
30.	3.26
35.	6.76
40.	11.3
40.95 (max)	12.4

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
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RMS %  
Error  
7.56

Life Prediction Ratio Summary

RMS %  
Error

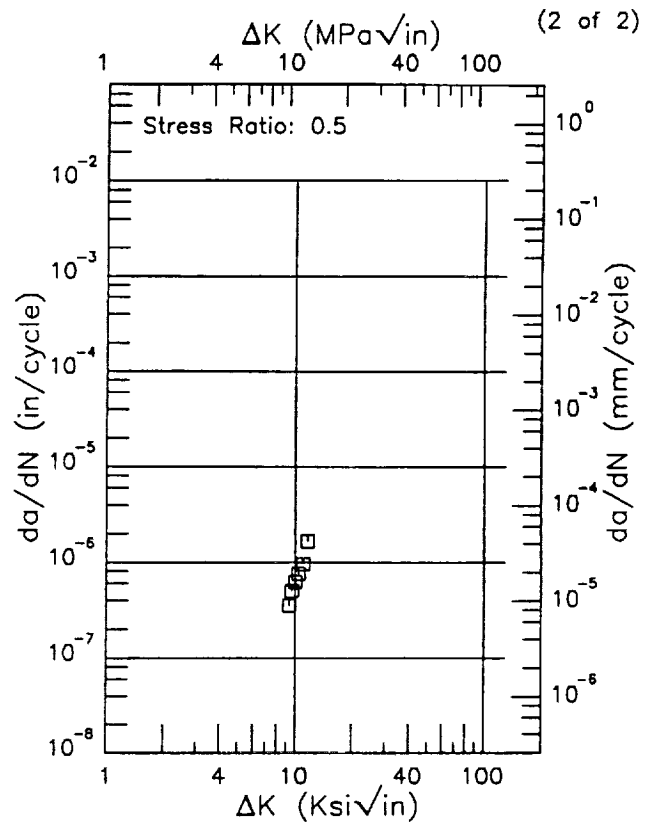
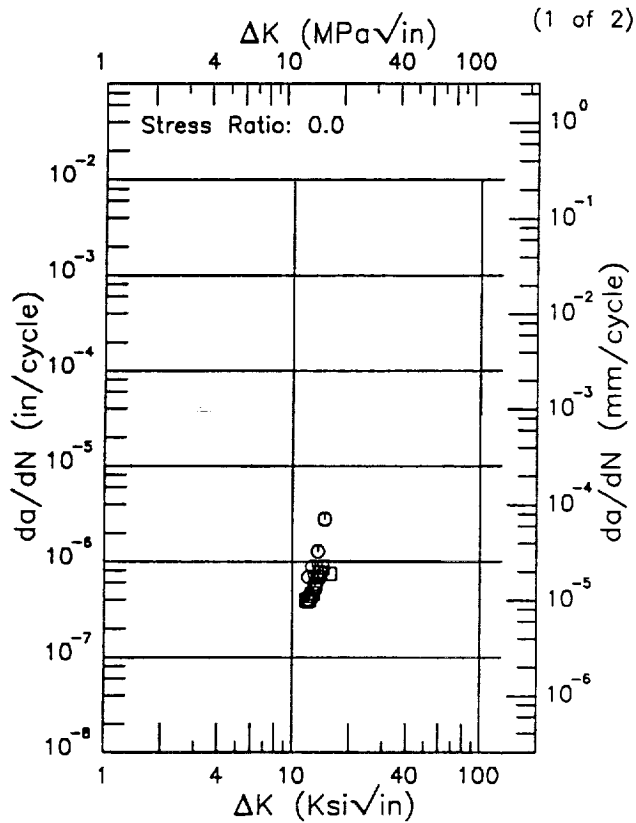
Life Prediction Ratio Summary



R | A533 |

Condition/Ht: QUENCHED,TEMPERED, AND  
 Form: Plate  
 Specimen Type: CT  
 Orientation: T-L  
 Frequency: 1 Hz  
 Environment: PWR WATER;608°F

Yield Strength: 70.1 ksi  
 Ult. Strength: 88. ksi  
 Specimen Thk: 0.394 in.  
 Specimen Width: 2.362 in.  
 Ref: EPFUND



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
11.85 (min)	0.440
13.	0.609
15.66 (max)	0.739

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
11.85 (min)	0.440
13.	0.609
15.66 (max)	0.739

RMS %  
 Error  
 79.69

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

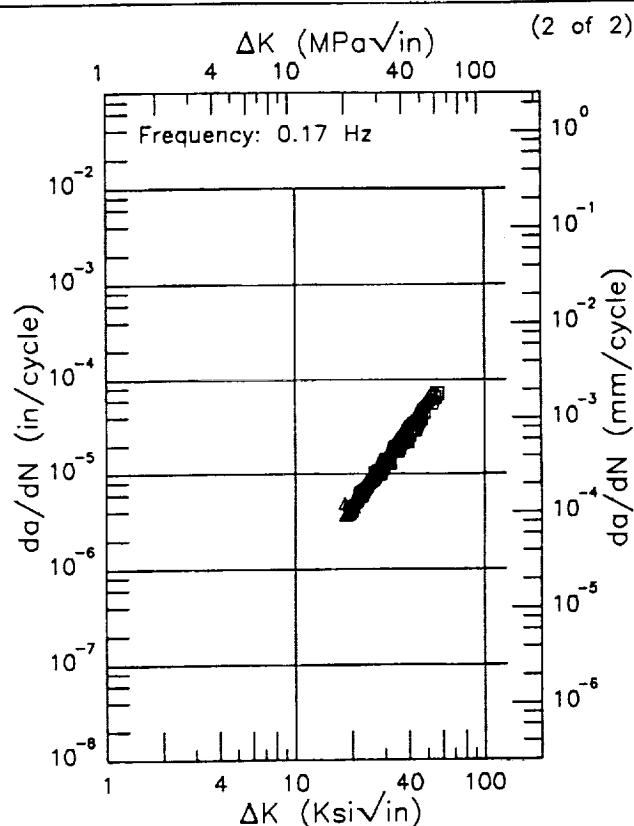
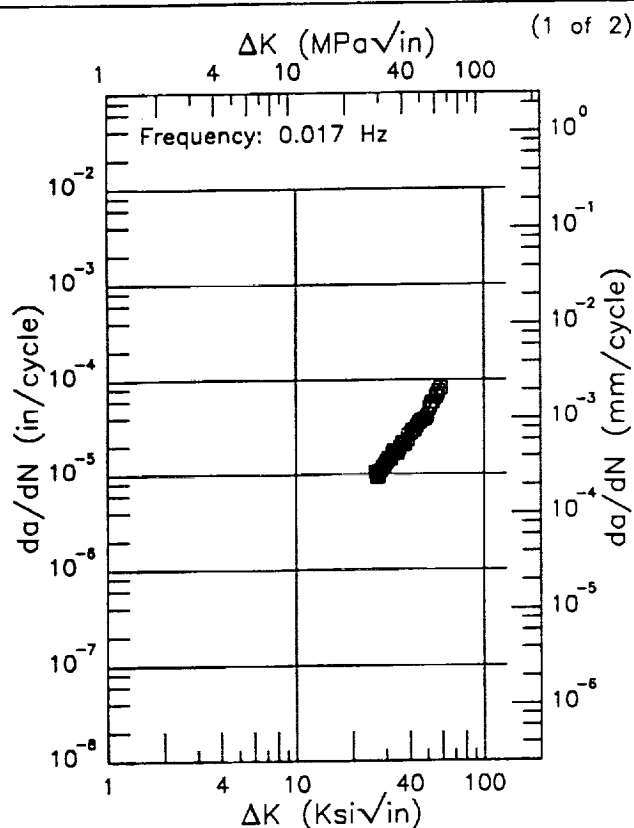
RMS %  
 Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

Condition/Ht: QUENCHED, TEMPERED, AND  
 Form: Plate  
 Specimen Type: CT  
 Orientation: T-L  
 Stress Ratio: 0.2  
 Environment: PWR WATER; 608°F

Yield Strength:  
 Ult. Strength: 78.9 - 80. ksi  
 Specimen Thk: 1 in.  
 Specimen Width: 2 in.  
 Ref: EPTAK

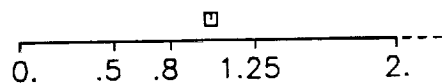


$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
26.41 (min)	9.28
30.	13.0
35.	18.8
40.	25.6
50.	46.0
58.55 (max)	84.6

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
18.21 (min)	3.65
20.	4.54
25.	8.15
30.	13.3
35.	19.8
40.	28.1
50.	54.4
55.88 (max)	70.6

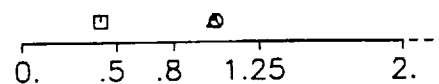
RMS %  
 Error  
 4.59

Life Prediction Ratio Summary



RMS %  
 Error  
 6.79

Life Prediction Ratio Summary

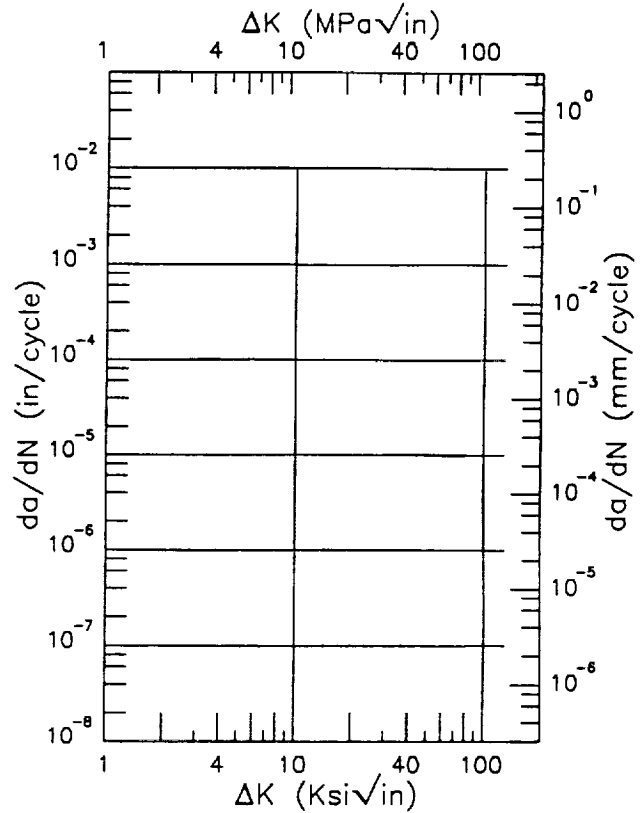
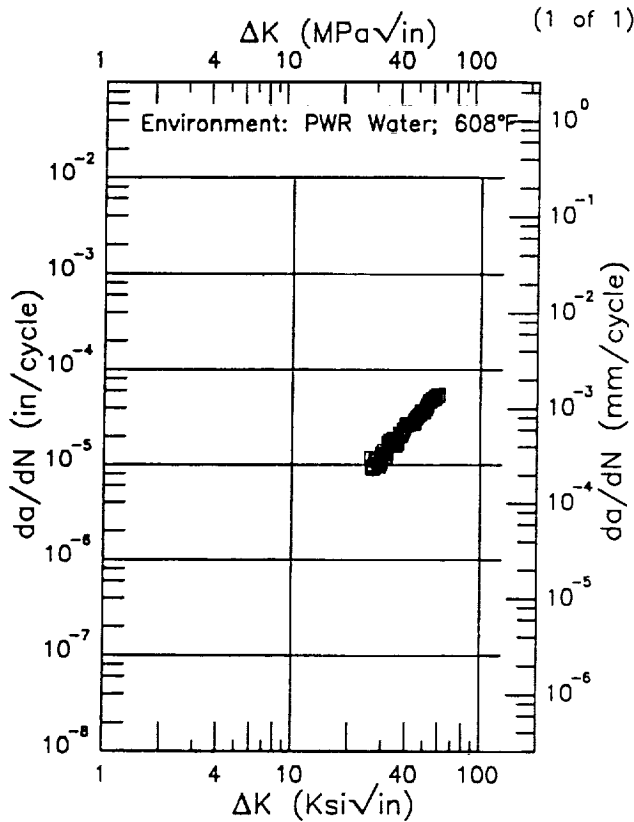


A533

E

Condition/Ht: QUENCHED, TEMPERED, AND  
Form: Plate  
Specimen Type: CT  
Orientation:  
Stress Ratio: 0.2  
Frequency: 0. Hz

Yield Strength:  
Ult. Strength: 78.9 ksi  
Specimen Thk: 1 in.  
Specimen Width: 2 in.  
Ref: EPTAK



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
26.12 (min)	9.45
30.	12.4
35.	18.4
40.	24.5
50.	38.5
58.87 (max)	53.6

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
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RMS %  
Error  
7.73

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

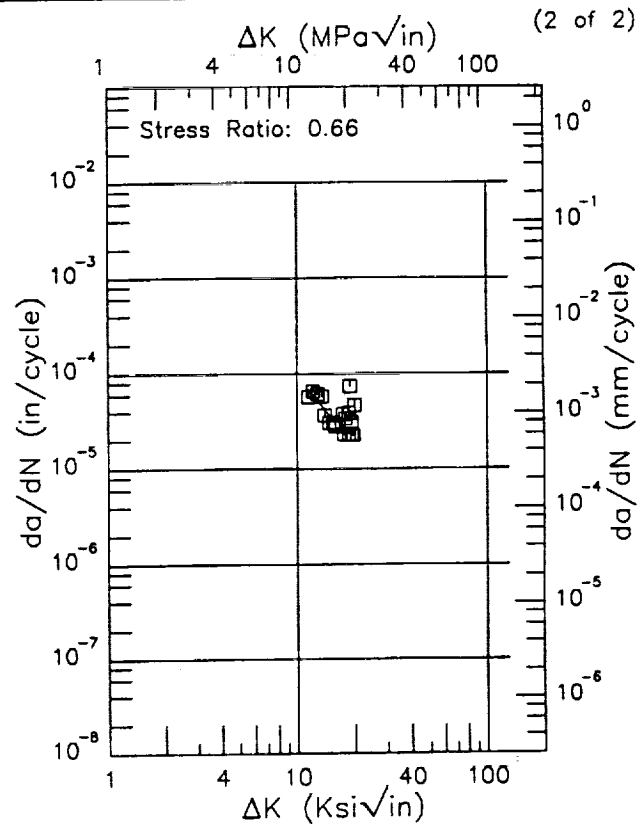
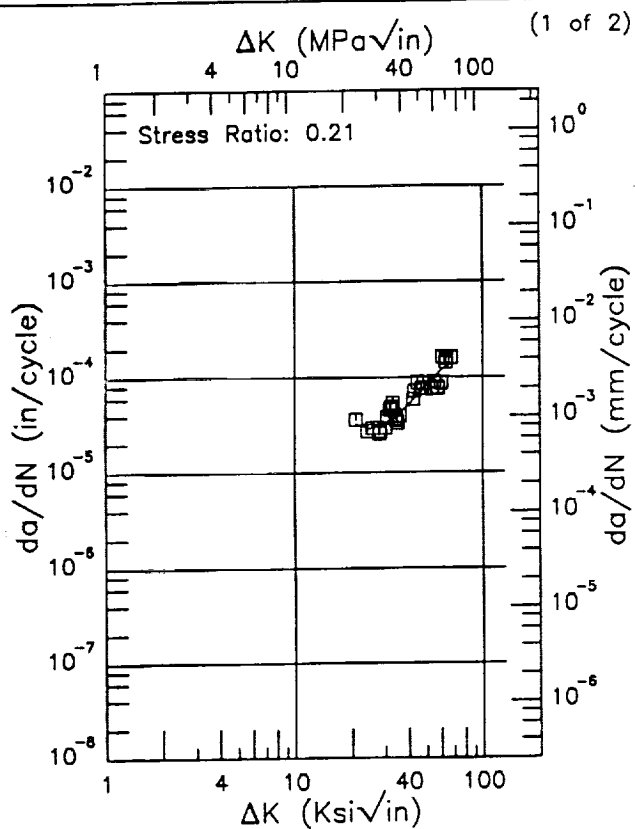
RMS %  
Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

Condition/Ht: -99  
 Form: Plate  
 Specimen Type: CT  
 Orientation: T-L  
 Frequency: 0. Hz  
 Environment: PWR WATER;550°F

Yield Strength:  
 Ult. Strength:  
 Specimen Thk: 2 in.  
 Specimen Width: 4 in.  
 Ref: EPWEO

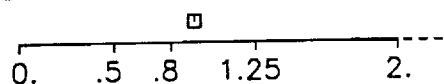


ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
20.96 (min)	32.8
25.	29.1
30.	32.3
35.	40.2
40.	51.7
50.	82.3
60.	116.
67.76 (max)	138.

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
11.49 (min)	70.0
13.	51.9
16.	31.2
20.	38.0
20.07 (max)	38.6

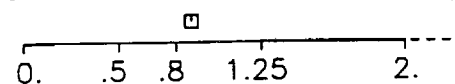
RMS %  
 Error  
 20.81

Life Prediction Ratio Summary



RMS %  
 Error  
 31.83

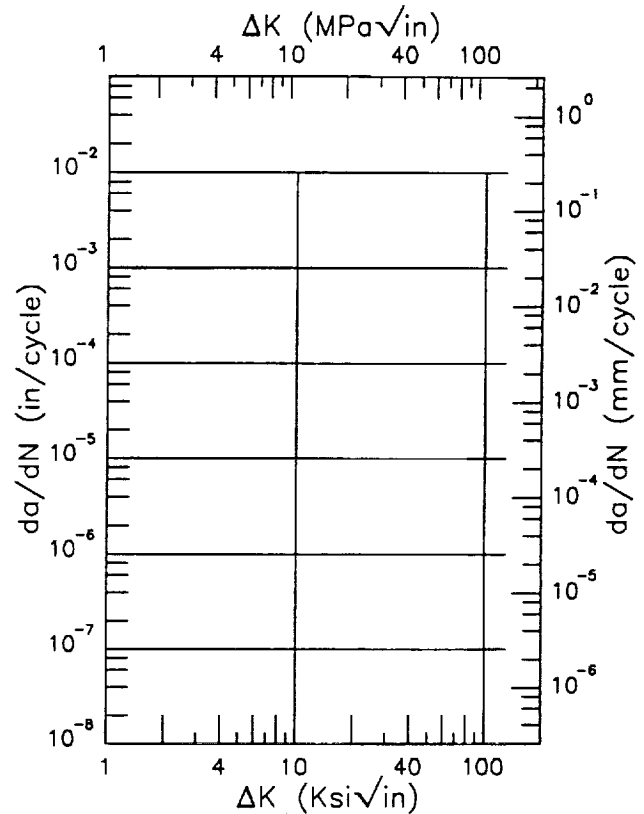
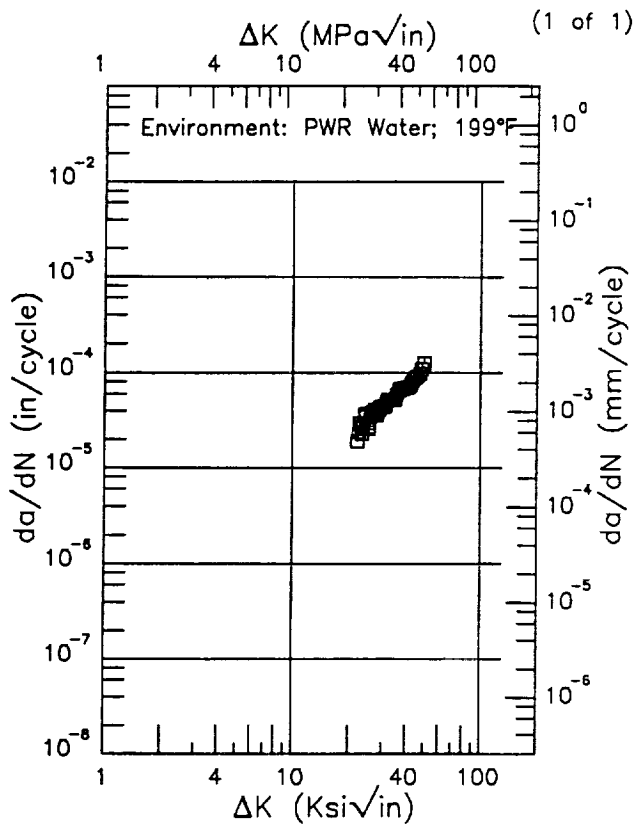
Life Prediction Ratio Summary



E | A533 |

Condition/Ht: -99  
 Form: Plate  
 Specimen Type: CT  
 Orientation: T-L  
 Stress Ratio: 0.2  
 Frequency: 0. Hz

Yield Strength:  
 Ult. Strength:  
 Specimen Thk: 2 in.  
 Specimen Width: 4 in.  
 Ref: EPGAB



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
22.01 (min)	24.0
25.	32.5
30.	44.9
35.	56.5
40.	70.4
49.86 (max)	116.

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
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RMS %  
 Error  
 8.07

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

RMS %  
 Error

Life Prediction Ratio Summary

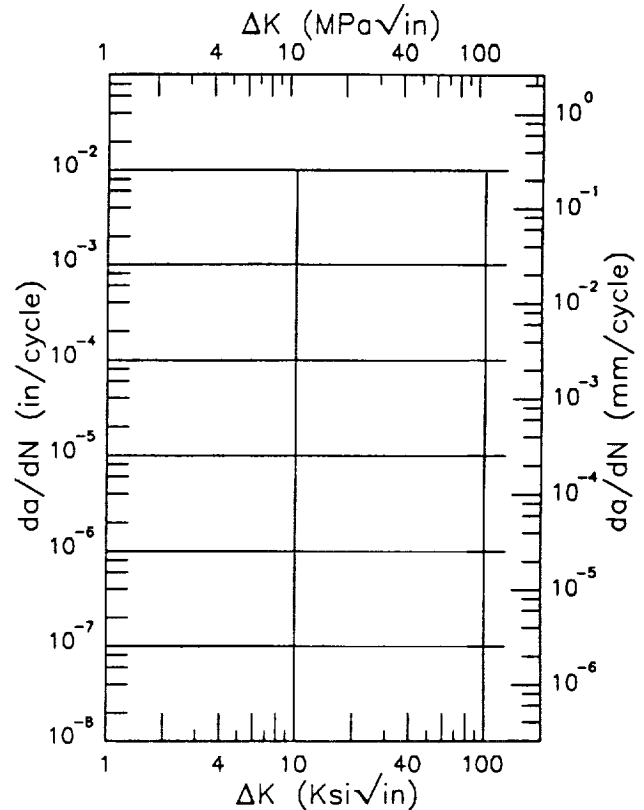
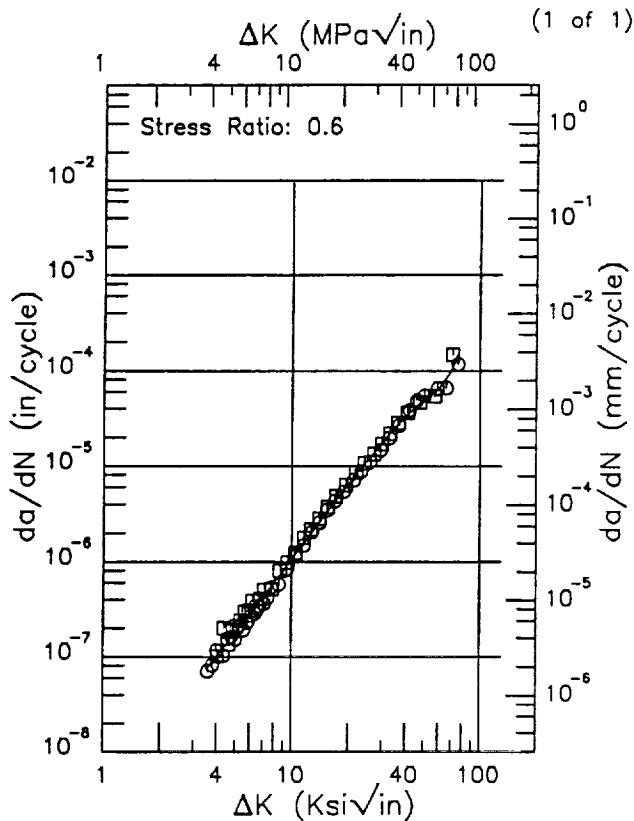
0. .5 .8 1.25 2. ---

B1-118

R | AERMET 100 |

Condition/Ht: -99  
 Form: 6 in. Forging  
 Specimen Type: CT  
 Orientation: L-T  
 Frequency: 4 Hz  
 Environment: HHA; RT

Yield Strength: 253 ksi  
 Ult. Strength:  
 Specimen Thk: 0.249 - 0.253 in.  
 Specimen Width: 2.999 in.  
 Ref: F22



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
3.56 (min)	0.0760
4.	0.101
5.	0.176
6.	0.280
7.	0.418
8.	0.593
9.	0.808
10.	1.07
13.	2.13
16.	3.66
20.	6.49
25.	11.3
30.	17.6
35.	25.0
40.	33.1
50.	49.1
60.	64.5
70.	75.69 (max)
100.	149

ΔK (Ksi√in)      da/dN (10<sup>-6</sup>in/cycle)

RMS % Error 13.84

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

RMS % Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

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B1-119

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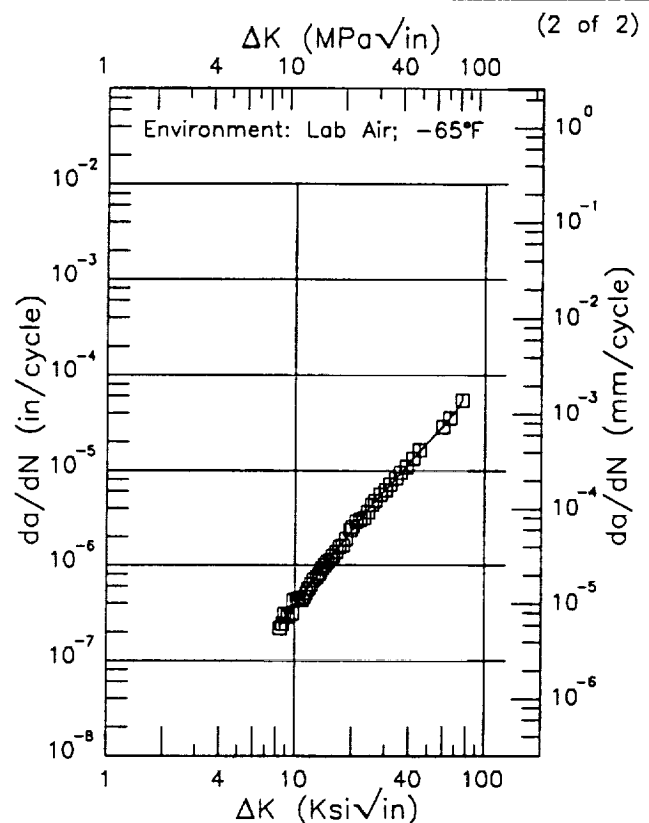
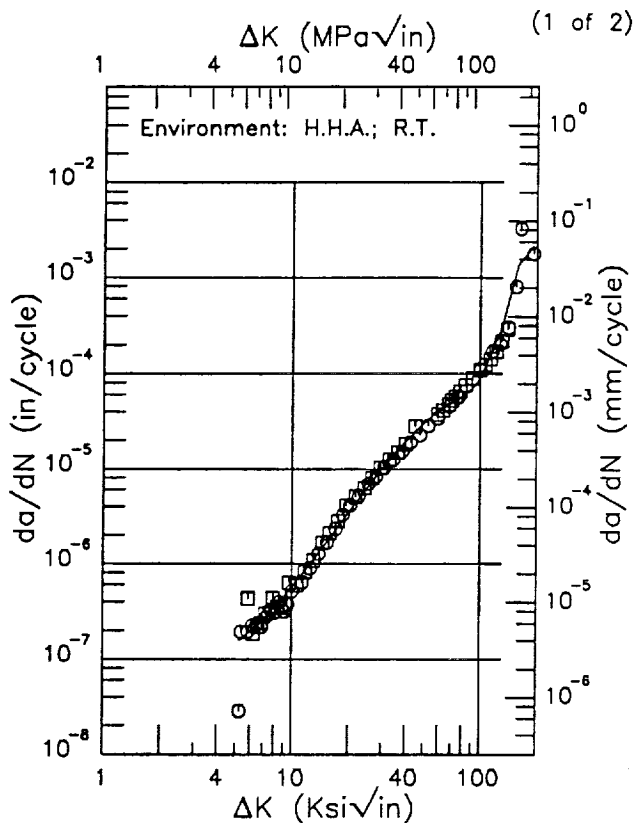
B1-120



# AERMET 100

Condition/Ht: -99  
Form: 6 in. Forging  
Specimen Type: CT  
Orientation: L-T  
Stress Ratio: 0.05  
Frequency: 4 Hz

Yield Strength: 253 ksi  
Ult. Strength:  
Specimen Thk: 0.252 in.  
Specimen Width: 2.997 - 3.002 in.  
Ref: F22



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
5.25 (min)	0.159
6.	0.195
7.	0.259
8.	0.341
9.	0.443
10.	0.567
13.	1.10
16.	1.91
20.	3.47
25.	6.27
30.	9.95
35.	14.4
40.	19.4
50.	30.1
60.	40.5
70.	49.3
80.	57.7

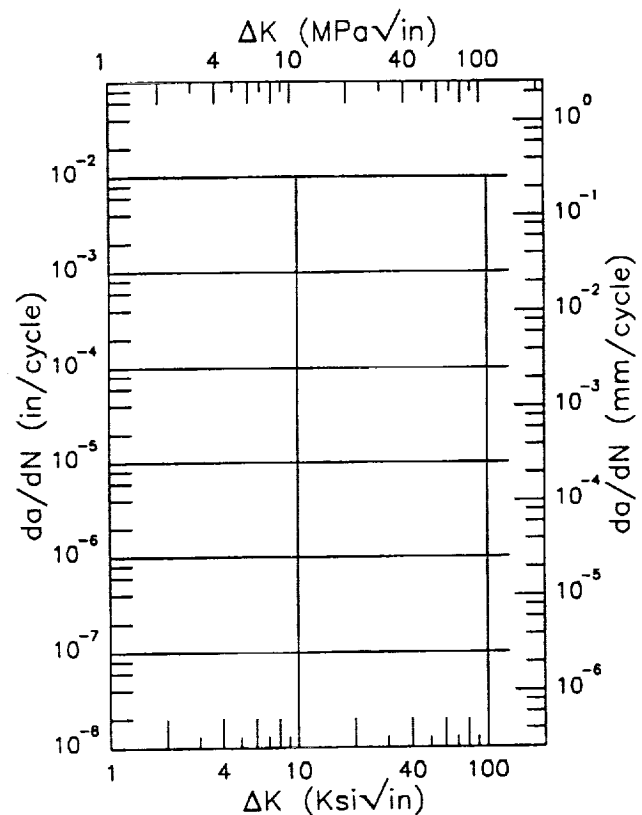
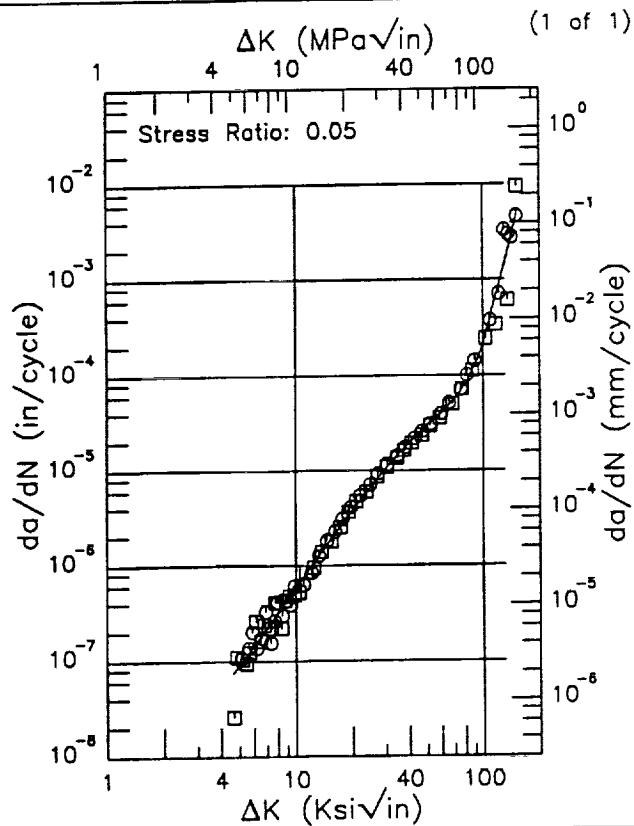
$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
8.32 (min)	0.236
9.	0.287
10.	0.374
13.	0.744
16.	1.29
20.	2.32
25.	4.07
30.	6.26
35.	8.89
40.	12.0
50.	19.9
60.	29.1
70.	41.4
75.48 (max)	54.2

RMS % Error 26.93  
Life Prediction Ratio Summary  
0. 0.5 0.8 1.25 2.0

RMS % Error 5.47  
Life Prediction Ratio Summary  
0. 0.5 0.8 1.25 2.0

Condition/Ht: -99  
 Form: 6 in. Forging  
 Specimen Type: CT  
 Orientation: T-L  
 Frequency: 4 Hz  
 Environment: HHA; RT

Yield Strength: 253 ksi  
 Ult. Strength:  
 Specimen Thk: 0.253 in.  
 Specimen Width: 3 - 3.001 in.  
 Ref: F22



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
4.64 (min)	0.0757
5.	0.0916
6.	0.147
7.	0.222
8.	0.318
9.	0.440
10.	0.588
13.	1.21
16.	2.14
20.	3.86
25.	6.79
30.	10.5
35.	14.9
40.	19.7
50.	30.3
60.	41.3
70.	55.8
80.	80.3

$\Delta K$  (Ksi√in)  $da/dN$  ( $10^{-6}$  in/cycle)

RMS % Error 28.39

Life Prediction Ratio Summary

0. 0.5 .8 1.25 2.

RMS % Error

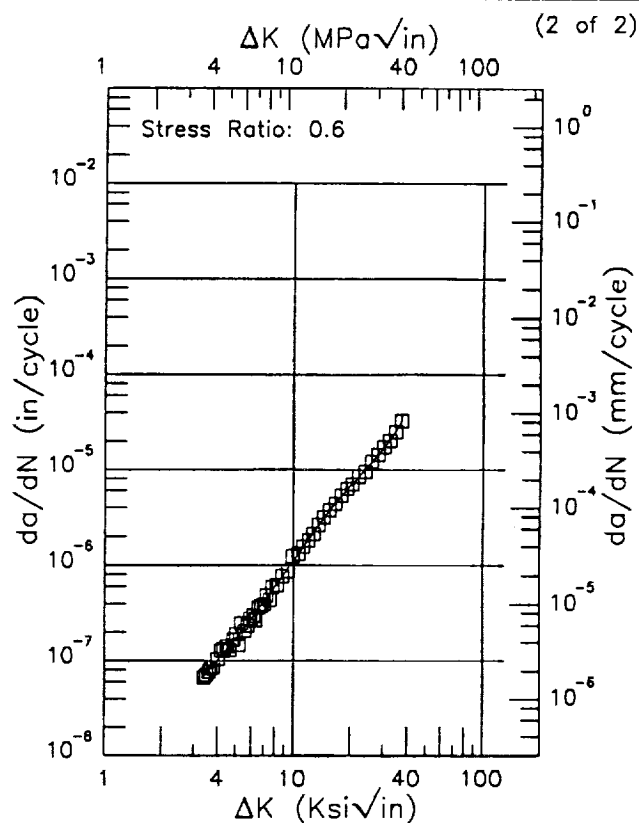
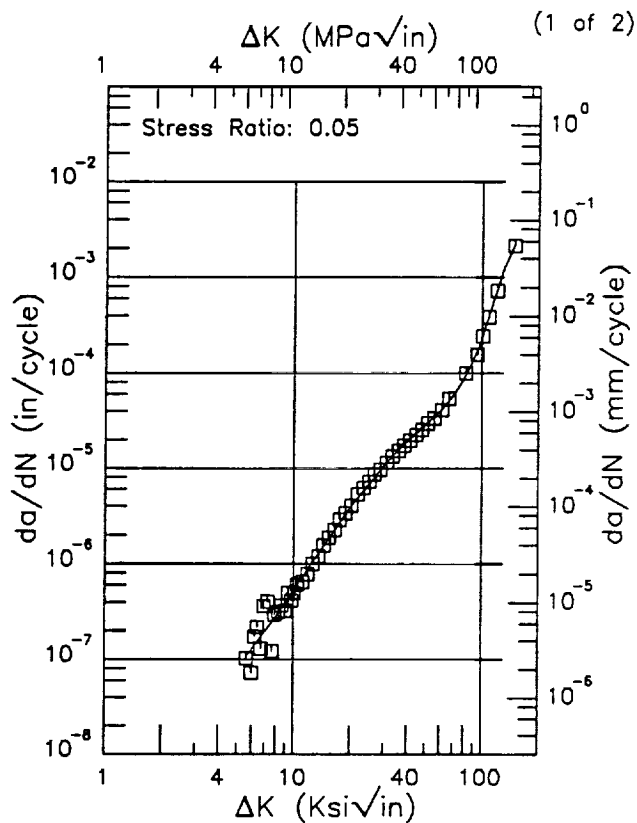
Life Prediction Ratio Summary

0. .5 .8 1.25 2.

# R | AERMET 100 |

Condition/Ht: -99  
Form: 6 in. Forging  
Specimen Type: CT  
Orientation: S-L  
Frequency: 4 Hz  
Environment: HHA; RT

Yield Strength: 253 ksi  
Ult. Strength:  
Specimen Thk: 0.253 in.  
Specimen Width: 2.999 - 3 in.  
Ref: F22



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
5.62 (min)	0.108
6.	0.128
7.	0.193
8.	0.280
9.	0.391
10.	0.530
13.	1.14
16.	2.07
20.	3.84
25.	6.87
30.	10.6
35.	14.9
40.	19.3
50.	28.3
60.	39.7
70.	57.5
80.	87.6

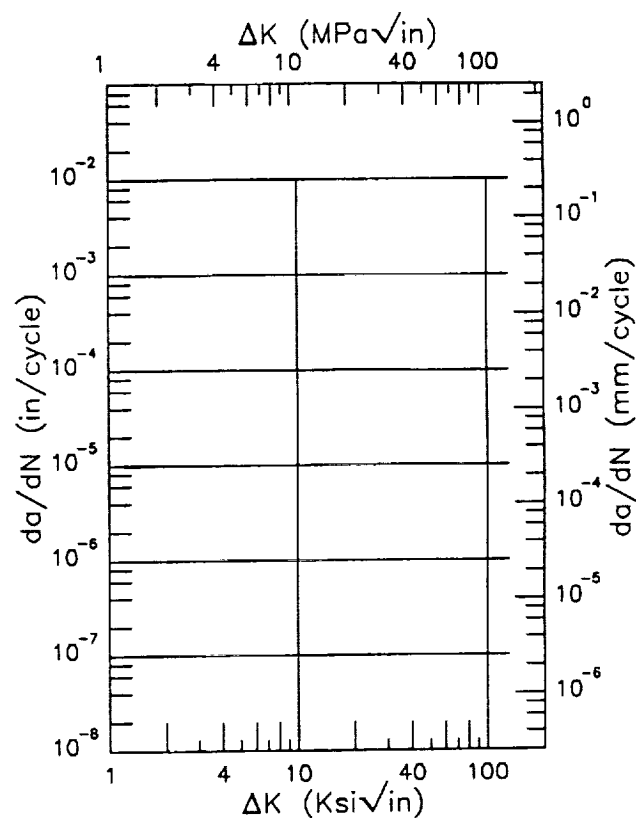
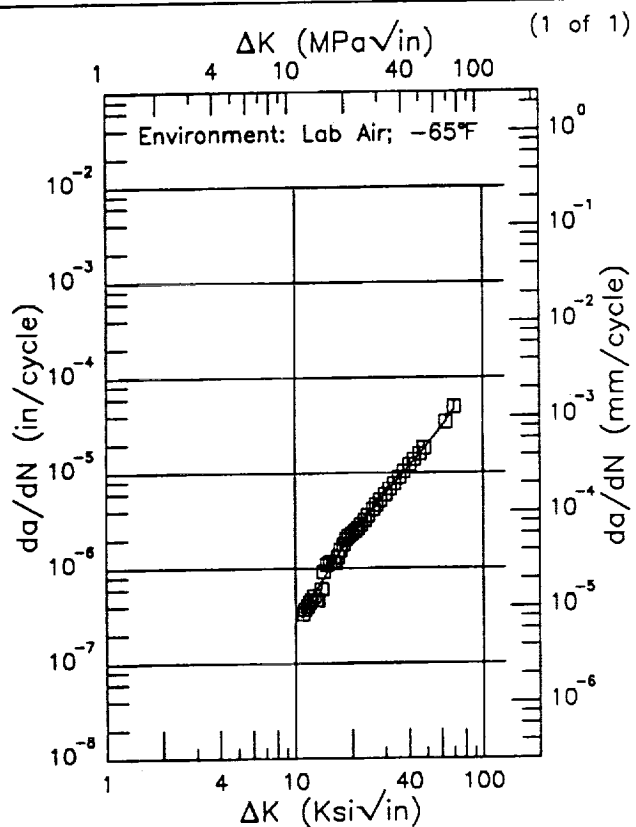
$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
3.38 (min)	0.0706
3.5	0.0756
4.	0.101
5.	0.170
6.	0.272
7.	0.411
8.	0.594
9.	0.825
10.	1.11
13.	2.29
16.	3.98
20.	6.79
25.	10.9
30.	16.8
35.	26.3
37.15 (max)	32.0

RMS Error 23.34  
Life Prediction Ratio Summary  
147.95 (max) 2108.

RMS Error 7.54  
Life Prediction Ratio Summary

Condition/Ht: -99  
 Form: 6 in. Forging  
 Specimen Type: CT  
 Orientation: S-L  
 Stress Ratio: 0.05  
 Frequency: 4 Hz

Yield Strength: 253 ksi  
 Ult. Strength:  
 Specimen Thk: 0.248 in.  
 Specimen Width: 2.997 in.  
 Ref: F22



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
10.89 (min)	0.300
13.	0.597
16.	1.20
20.	2.27
25.	3.98
30.	6.07
35.	8.57
40.	11.6
50.	19.5
60.	30.9
69.84 (max)	47.3

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
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RMS %  
 Error  
 8.93

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS %  
 Error

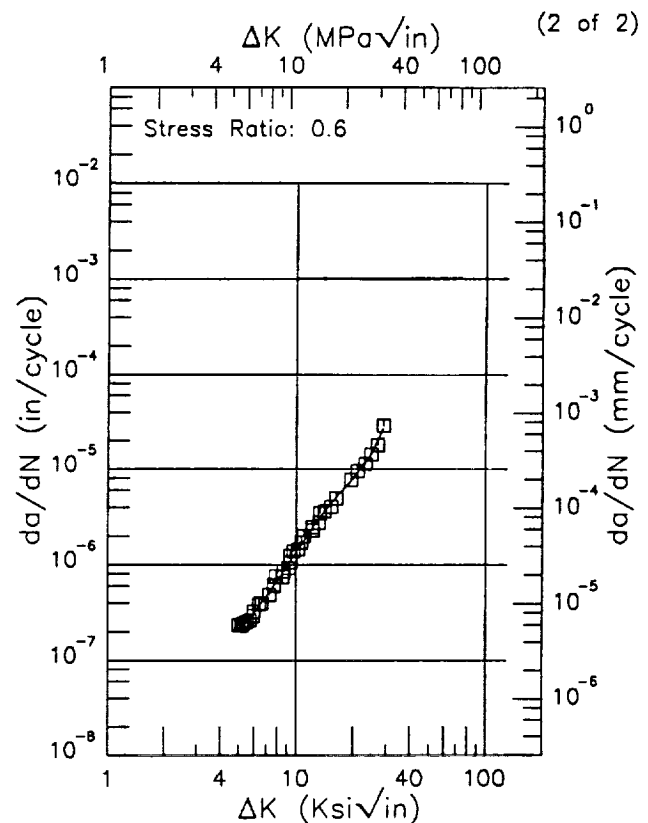
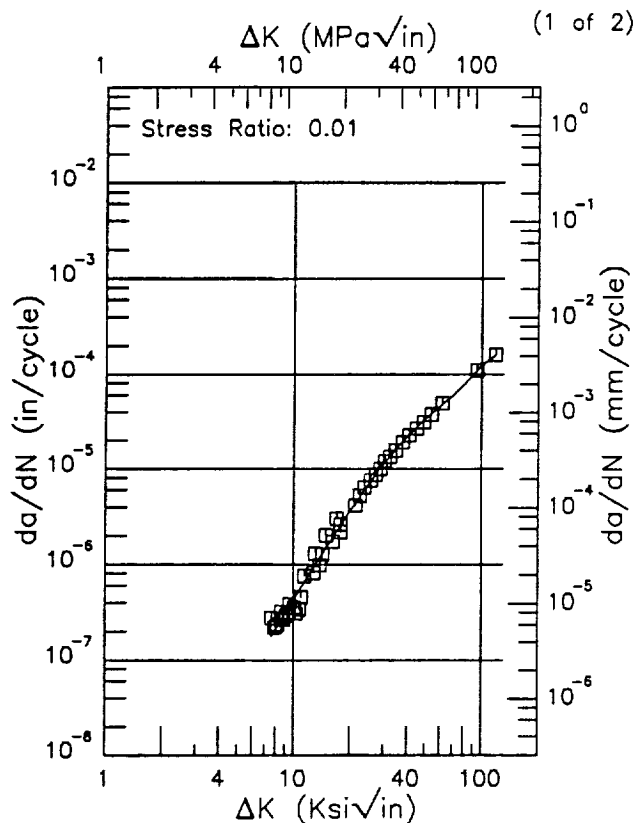
Life Prediction Ratio Summary

0. .5 .8 1.25 2.

# R | AERMET 100 |

Condition/Ht: -99  
Form: 6 in. Bar  
Specimen Type: CT  
Orientation: L-T  
Frequency: 4 Hz  
Environment: HHA; RT

Yield Strength: 270 ksi  
Ult. Strength:  
Specimen Thk: 0.246 - 0.247 in.  
Specimen Width: 3 - 3.001 in.  
Ref: F22



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
7.59 (min)	0.181
8.	0.212
9.	0.307
10.	0.428
13.	0.984
16.	1.88
20.	3.70
25.	6.98
30.	11.3
35.	16.4
40.	21.9
50.	33.4
60.	45.5
70.	59.5
80.	77.1
90.	99.7
100.	125.
117.39 (max)	158.

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
5.01 (min)	0.215
6.	0.314
7.	0.470
8.	0.692
9.	0.989
10.	1.36
13.	2.91
16.	4.84
20.	8.02
25.	14.4
28.73 (max)	26.6

RMS % Error 16.97

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS % Error 6.57

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

B1-126

# F | AERMET 100 |

Condition/Ht: -99

Form: Bar

Specimen Type: CT

Orientation: L-T

Stress Ratio: 0.05

Environment: 3.5% NACL; RT

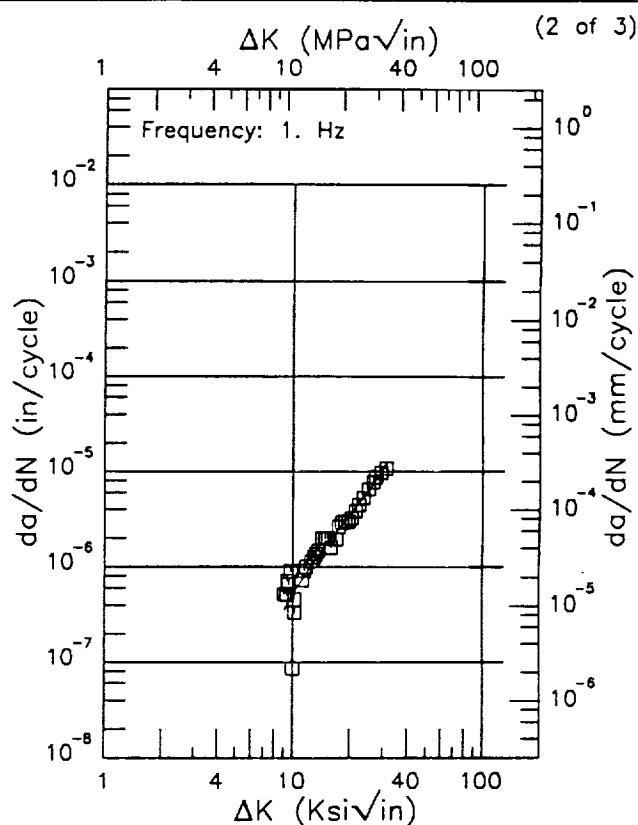
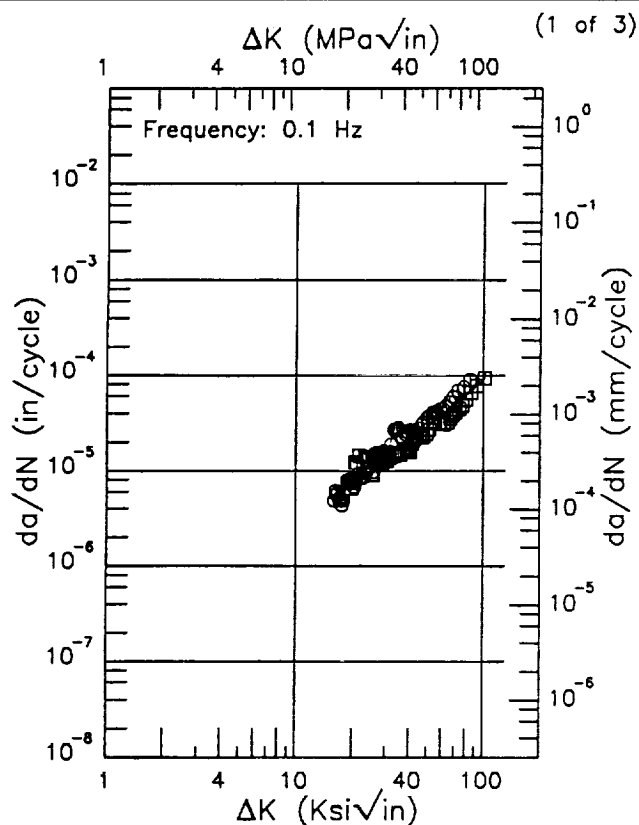
Yield Strength: 253 ksi

Ult. Strength:

Specimen Thk: 0.248 - 0.252 in.

Specimen Width: 2.996 - 3.001 in.

Ref: F22



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
15.87 (min)	4.72
16.	4.82
20.	8.04
25.	11.8
30.	15.2
35.	18.5
40.	21.8
50.	29.3
60.	38.5
70.	49.2
80.	61.5
90.	75.5
100.	91.6
100.93 (max)	93.2

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
9.02 (min)	0.358
10.	0.520
13.	1.15
16.	1.98
20.	3.43
25.	6.17
30.	10.7
30.86 (max)	11.8

RMS %  
Error  
18.83

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS %  
Error  
30.49

Life Prediction Ratio Summary

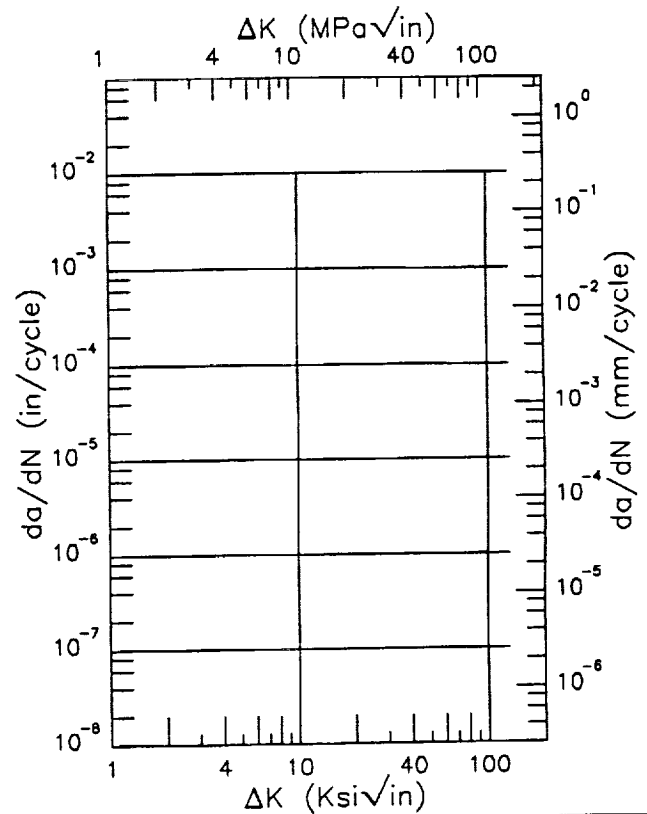
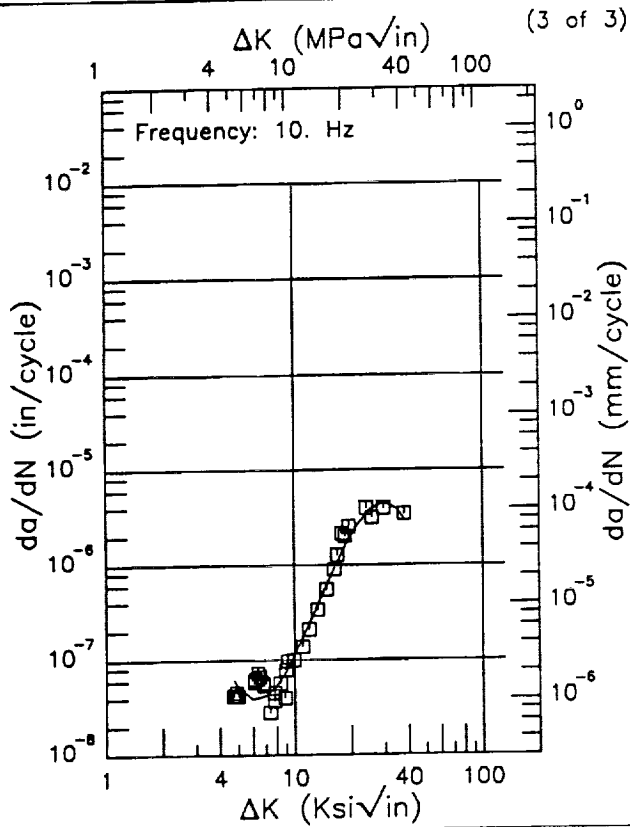
0. .5 .8 1.25 2.

B1-127

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Condition/Ht: -99  
 Form: Bar  
 Specimen Type: CT  
 Orientation: L-T  
 Stress Ratio: 0.05  
 Environment: 3.5% NACL; RT

Yield Strength: 253 ksi  
 Ult. Strength:  
 Specimen Thk: 0.248 - 0.252 in.  
 Specimen Width: 2.996 - 3.001 in.  
 Ref: F22



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
4.73 (min)	0.0625
5.	0.0522
6.	0.0390
7.	0.0420
8.	0.0542
9.	0.0763
10.	0.111
13.	0.343
16.	0.876
20.	2.12
25.	3.87
30.	4.55
35.	3.86
38.04 (max)	3.09

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
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RMS %  
 Error  
 32.84

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS %  
 Error

Life Prediction Ratio Summary

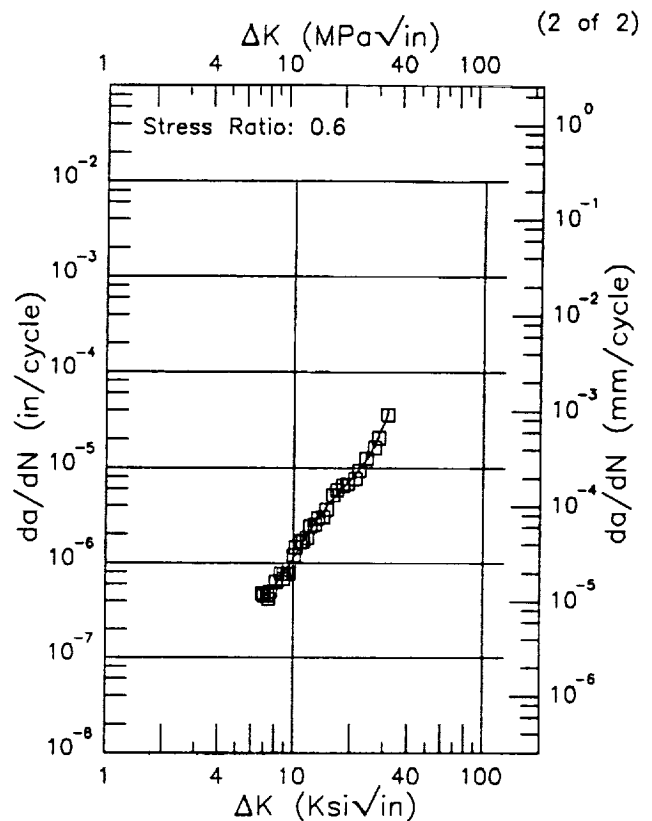
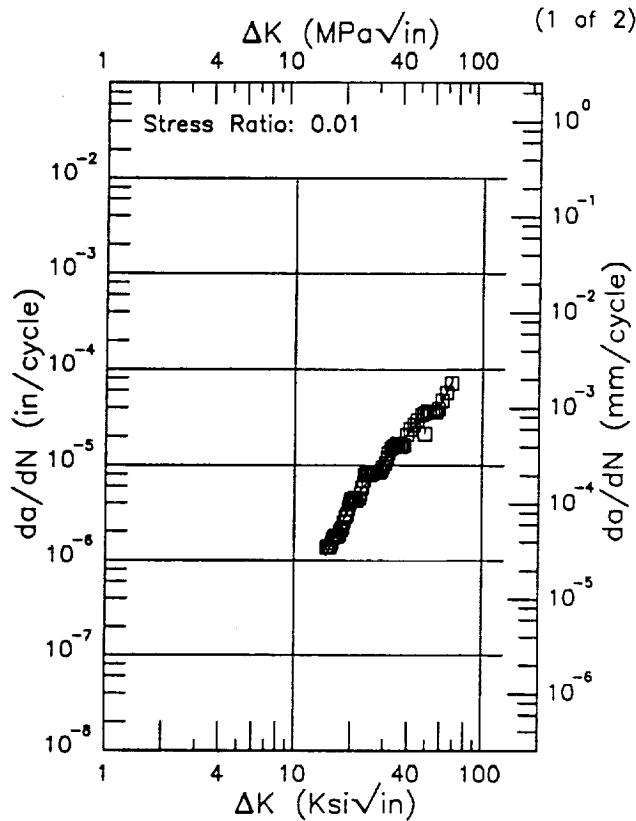
0. .5 .8 1.25 2.



# R | AERMET 100 |

Condition/Ht: -99  
 Form: 6 in. Bar  
 Specimen Type: CT  
 Orientation: T-L  
 Frequency: 4 Hz  
 Environment: HHA; RT

Yield Strength: 260 ksi  
 Ult. Strength:  
 Specimen Thk: 0.247 in.  
 Specimen Width: 3 - 3.001 in.  
 Ref: F22



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
14.73 (min)	1.11
16.	1.61
20.	3.76
25.	7.31
30.	11.5
35.	16.2
40.	21.3
50.	32.8
60.	44.7
68.23 (max)	73.6

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
6.81 (min)	0.422
7.	0.439
8.	0.577
9.	0.800
10.	1.12
13.	2.64
16.	4.63
20.	7.54
25.	13.1
30.	29.0
31.05 (max)	35.5

RMS %  
 Error  
 11.31

Life Prediction Ratio Summary

0. .5 .8 1.25 2.---

RMS %  
 Error  
 8.55

Life Prediction Ratio Summary

0. .5 .8 1.25 2.---

Condition/Ht: -99

Form: 6 in. Bar

Specimen Type: CCP (max load specified)

Orientation: L-T

Stress Ratio:

Frequency: 4 Hz

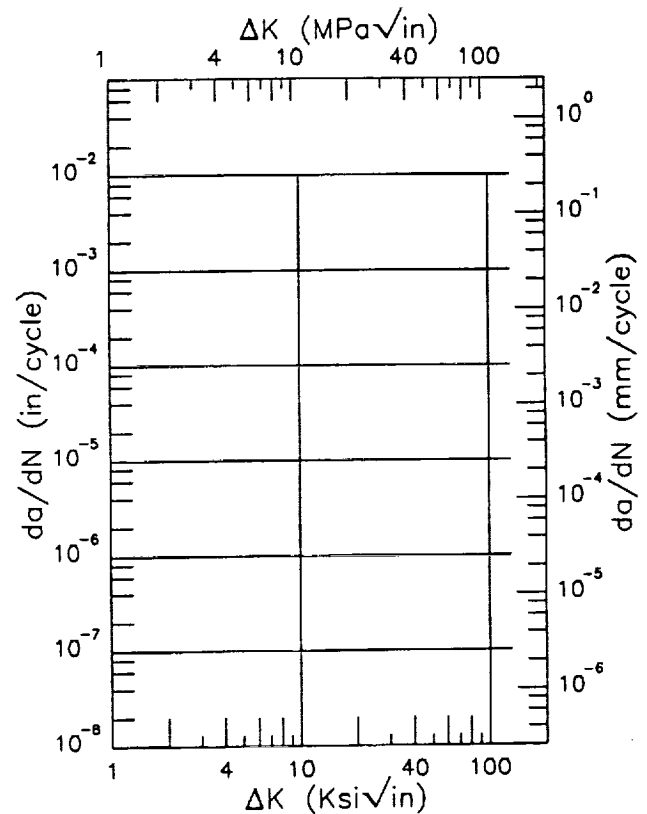
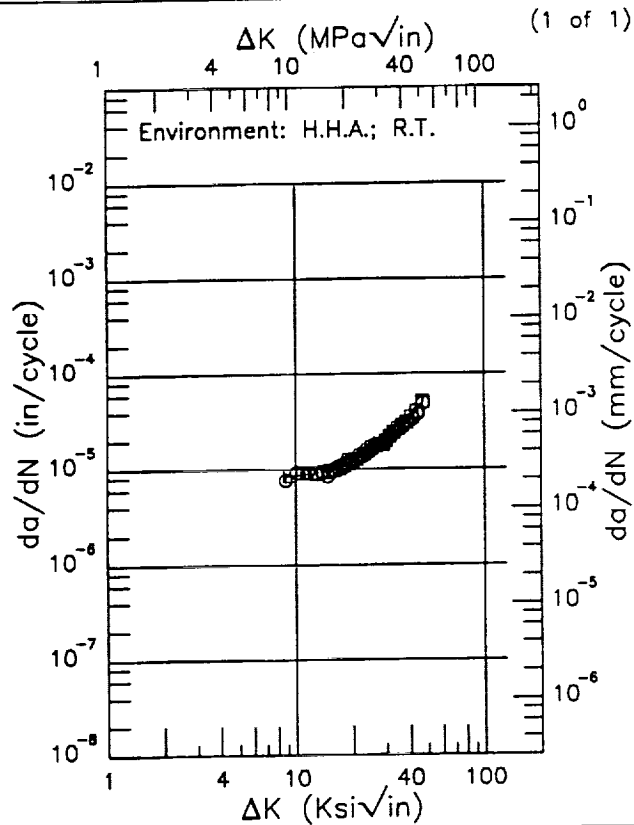
Yield Strength:

Ult. Strength:

Specimen Thk: 0.3 - 0.301 in.

Specimen Width: 4.002 - 4.003 in.

Ref: F22



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
8.78 (min)	8.33
9.	8.40
10.	8.62
13.	9.15
16.	9.96
20.	11.9
25.	15.8
30.	20.7
35.	26.2
40.	32.3
47.22 (max)	51.5

$\Delta K$  (Ksi $\sqrt{\text{in}}$ )      da/dN (10<sup>-6</sup> in/cycle)

RMS %  
Error  
4.00

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS %  
Error

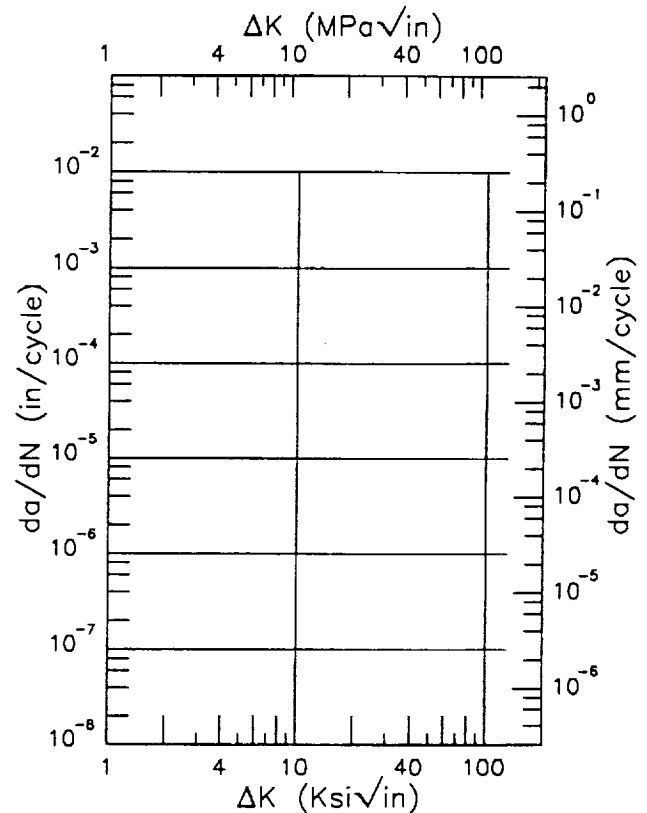
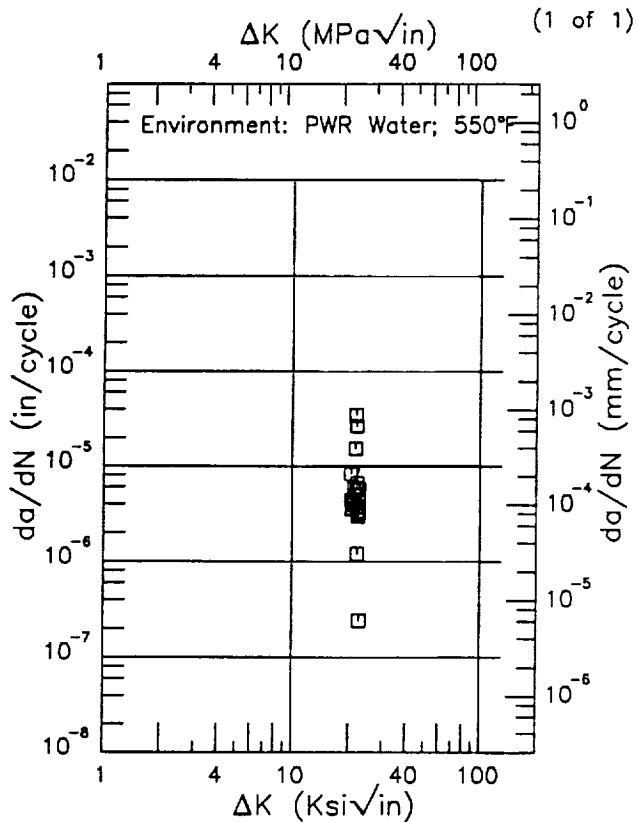
Life Prediction Ratio Summary

0. .5 .8 1.25 2.

# C-MN STEEL

Condition/Ht: -99  
 Form: Plate  
 Specimen Type: CT  
 Orientation: L-T  
 Stress Ratio: 0.7  
 Frequency: 0. Hz

Yield Strength: 49.3 ksi  
 Ult. Strength: 82.7 ksi  
 Specimen Thk: 1.969 in.  
 Specimen Width: 3.937 in.  
 Ref: EPUK0



$\Delta K$  (Ksi√in)       $da/dN$  ( $10^{-6}$  in/cycle)  
 20.25 (min)                      5.97  
 22.54 (max)                      9.39

$\Delta K$  (Ksi√in)       $da/dN$  ( $10^{-6}$  in/cycle)

RMS %  
 Error  
 92.65

Life Prediction Ratio Summary  
 0. .5 .8 1.25 2. ---

RMS %  
 Error

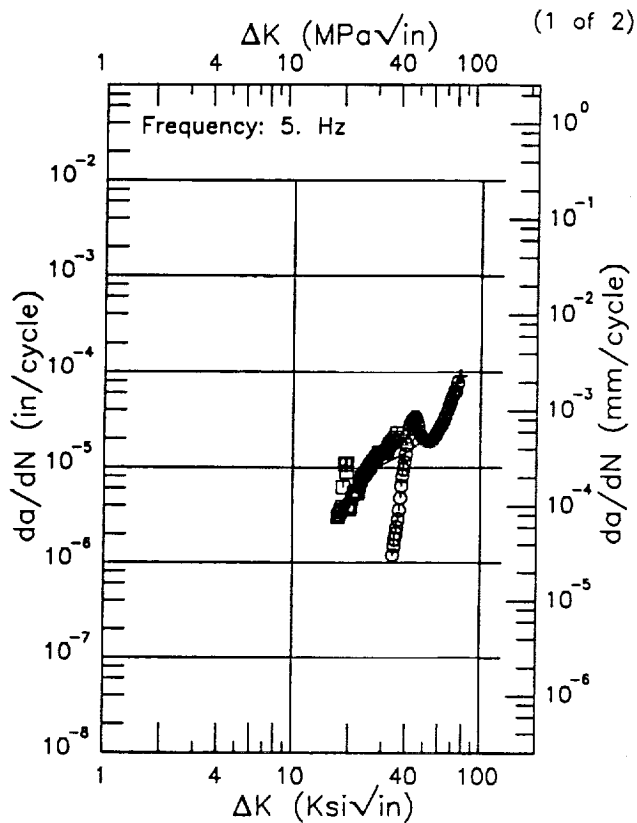
Life Prediction Ratio Summary  
 0. .5 .8 1.25 2. ---

B1-132

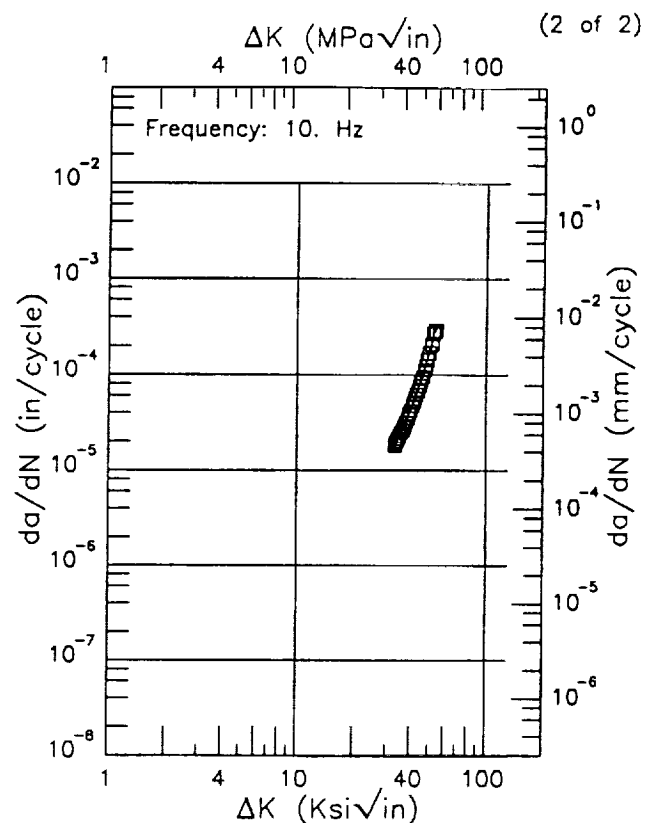
F HSLA-80

Condition/Ht: -99  
Form: Weldment  
Specimen Type: CT  
Orientation:  
Stress Ratio: 0.1  
Environment: LAB AIR; RT

Yield Strength: 80 ksi  
Ult. Strength:  
Specimen Thk: 0.448 - 0.477 in.  
Specimen Width: 4.042 - 4.043 in.  
Ref: DT004



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
17.25 (min)	3.82
20.	5.71
25.	8.62
30.	10.8
35.	12.6
40.	14.4
50.	19.2
60.	28.8
70.	52.7
77.53 (max)	95.6



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
32.76 (min)	17.9
35.	23.1
40.	42.9
50.	171.
53.93 (max)	311.

RMS %  
Error  
41.68

Life Prediction Ratio Summary

+0 Δ □

0. .5 .8 1.25 2.---

RMS %  
Error  
4.18

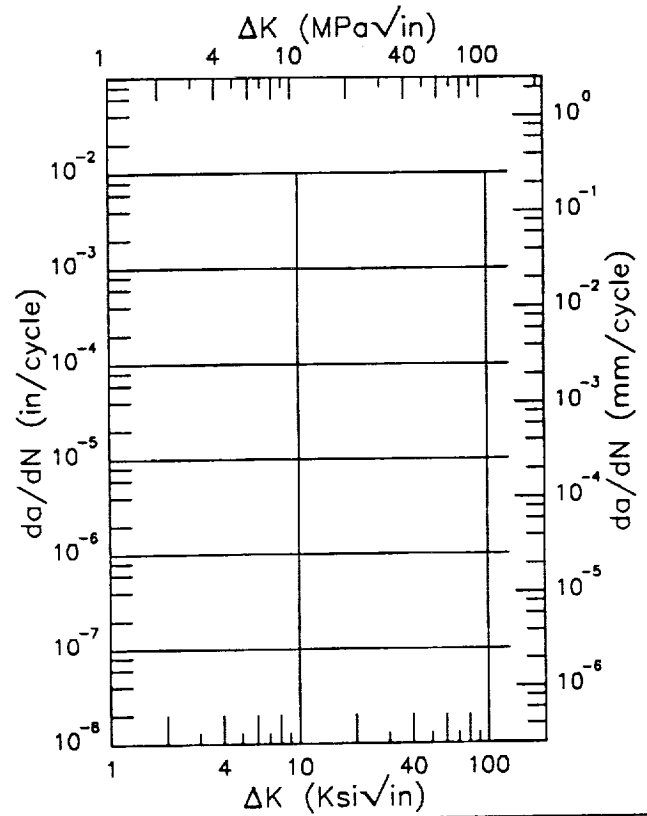
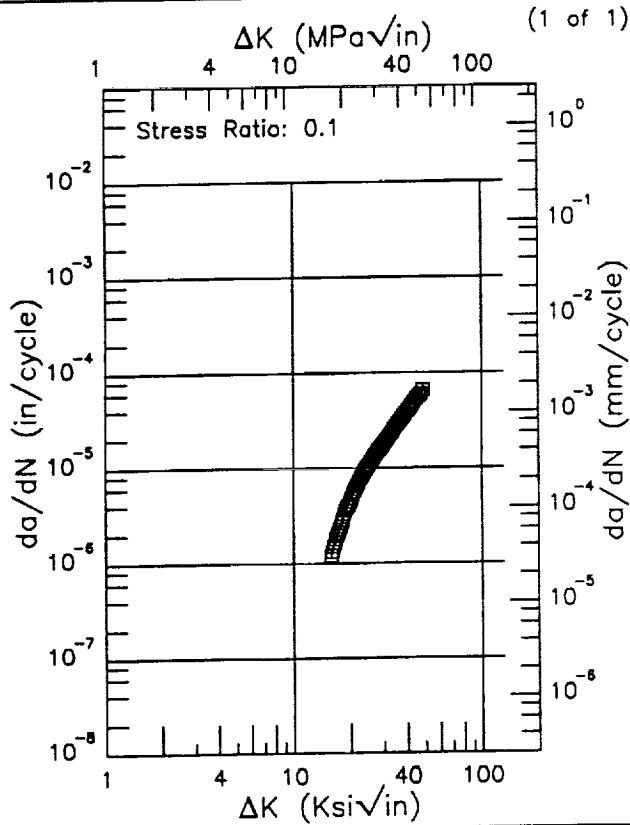
Life Prediction Ratio Summary

□

0. .5 .8 1.25 2.---

Condition/Ht: -99  
 Form:  
 Specimen Type: CT  
 Orientation:  
 Frequency: 5 Hz  
 Environment: LAB AIR; RT

Yield Strength:  
 Ult. Strength:  
 Specimen Thk: 0.475 in.  
 Specimen Width: 4.045 in.  
 Ref: DT004



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
15.74 (min)	1.22
16.	1.37
20.	4.80
25.	10.9
30.	18.1
35.	27.5
40.	39.8
48.41 (max)	65.1

$\Delta K$  (Ksi√in)       $da/dN$  ( $10^{-6}$  in/cycle)

RMS %  
 Error  
 3.54

Life Prediction Ratio Summary

0.    .5    .8    1.25    2.

RMS %  
 Error

Life Prediction Ratio Summary

0.    .5    .8    1.25    2.

R HY100

Condition/Ht: -99

Form: 0.366 in. Plate

Specimen Type: WOL

Orientation: T-L

Frequency: 0.5 Hz

Environment: 3.5% NACL; RT

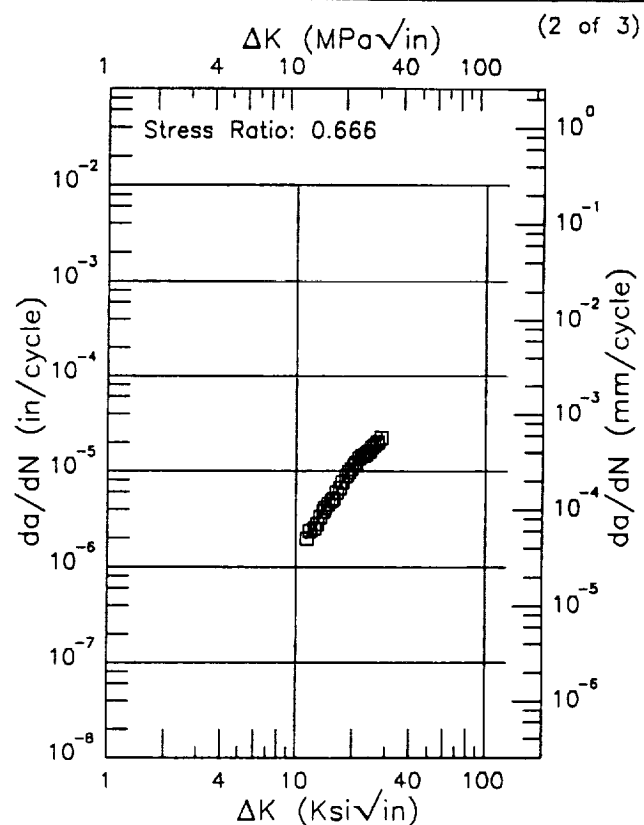
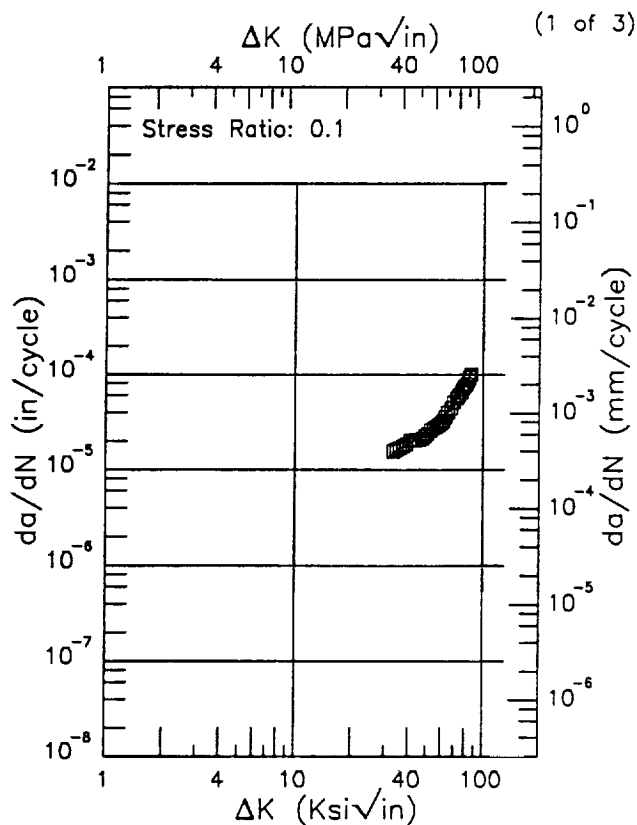
Yield Strength: 104.2 ksi

Ult. Strength: 116 ksi

Specimen Thk: 0.366 in.

Specimen Width: 5.098 in.

Ref: NRL00



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
33.06 (min)	15.2
35.	16.5
40.	18.9
50.	23.3
60.	32.2
70.	50.9
80.	77.5
85.56 (max)	99.5

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
11.37 (min)	2.00
13.	2.94
16.	5.51
20.	11.0
25.	17.1
28.05 (max)	21.9

RMS %  
Error  
2.11

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

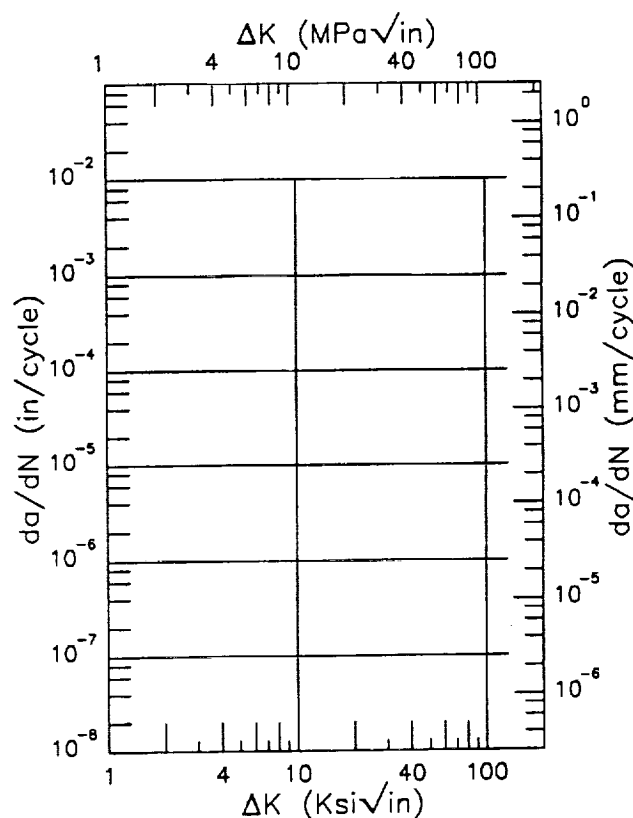
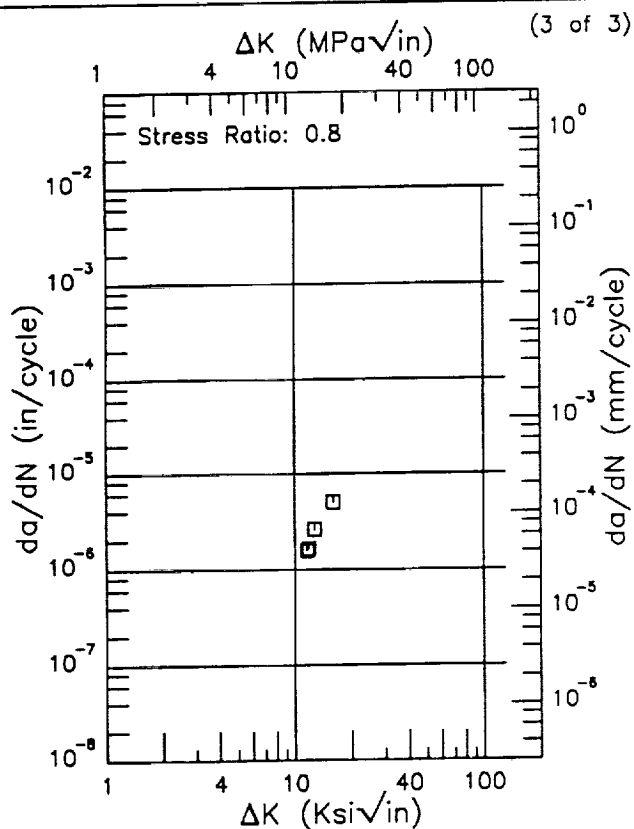
RMS %  
Error  
2.58

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

Condition/Ht: -99  
Form: 0.366 in. Plate  
Specimen Type: WOL  
Orientation: T-L  
Frequency: 0.5 Hz  
Environment: 3.5% NaCl; RT

Yield Strength: 104.2 ksi  
Ult. Strength: 116 ksi  
Specimen Thk: 0.366 in.  
Specimen Width: 5.098 in.  
Ref: NRL00



$\Delta K$  (Ksi $\sqrt{\text{in}}$ )       $da/dN$  ( $10^{-6}$  in/cycle)

$\Delta K$  (Ksi $\sqrt{\text{in}}$ )       $da/dN$  ( $10^{-6}$  in/cycle)

RMS %  
Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

RMS %  
Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

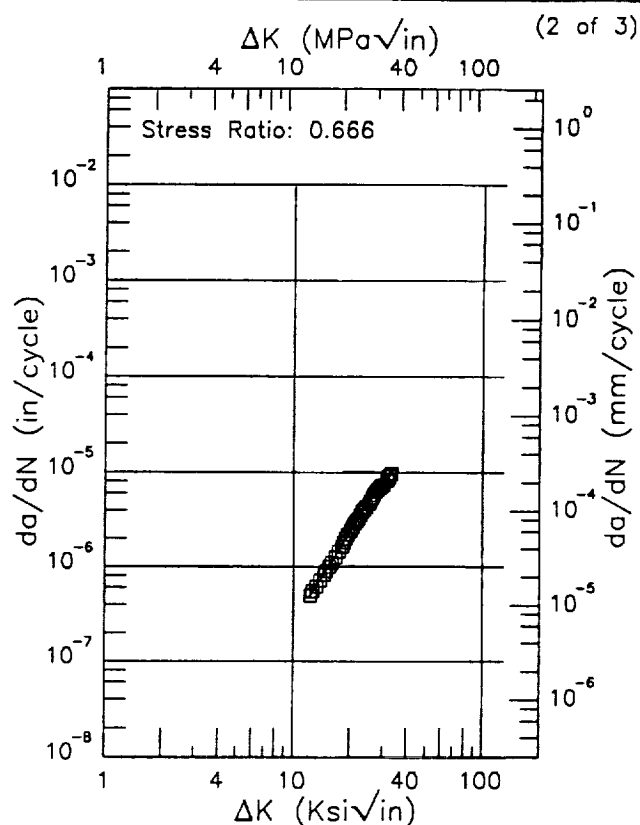
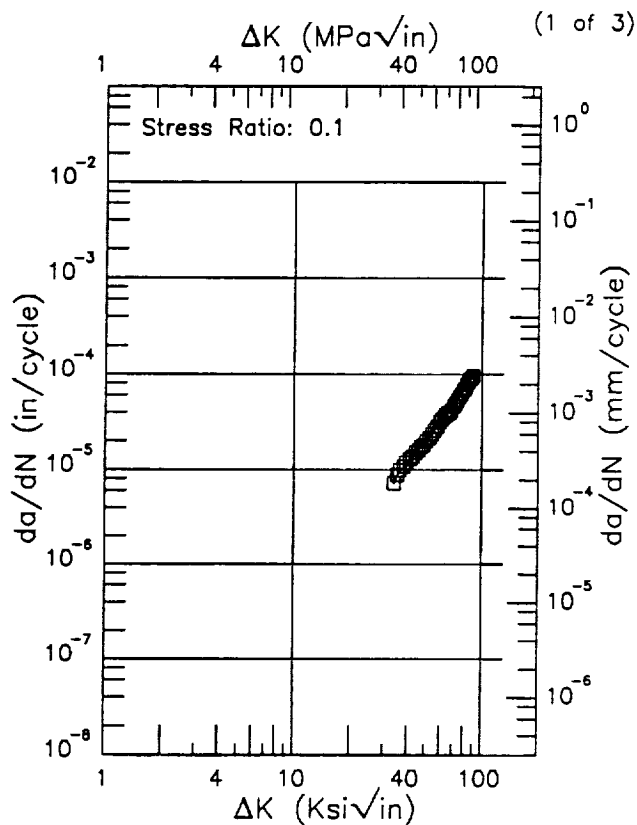


R

HY100

Condition/Ht: -99  
 Form: 0.366 in. Plate  
 Specimen Type: WOL  
 Orientation: T-L  
 Frequency: 5 Hz  
 Environment: LAB AIR; RT

Yield Strength: 104.2 ksi  
 Ult. Strength: 116 ksi  
 Specimen Thk: 0.366 in.  
 Specimen Width: 5.098 in.  
 Ref: NRL00



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
33.82 (min)	7.48
35.	8.52
40.	12.2
50.	19.4
60.	31.8
70.	45.5
80.	69.8
89.03 (max)	93.6

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
12.28 (min)	0.493
13.	0.579
16.	1.10
20.	2.34
25.	4.75
30.	7.52
32.81 (max)	9.31

RMS %  
 Error  
 1.90

Life Prediction Ratio Summary

0. .5 .8 1.25 2.---

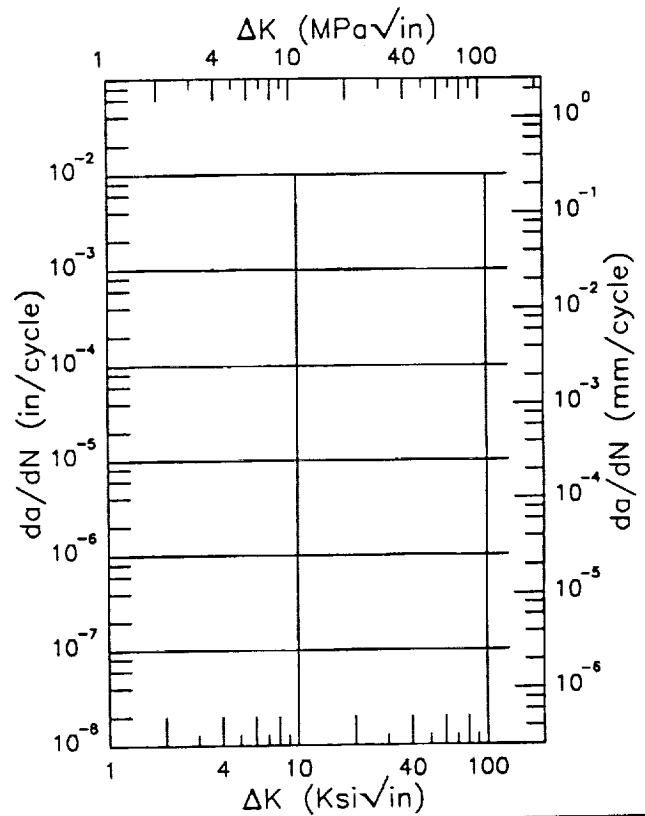
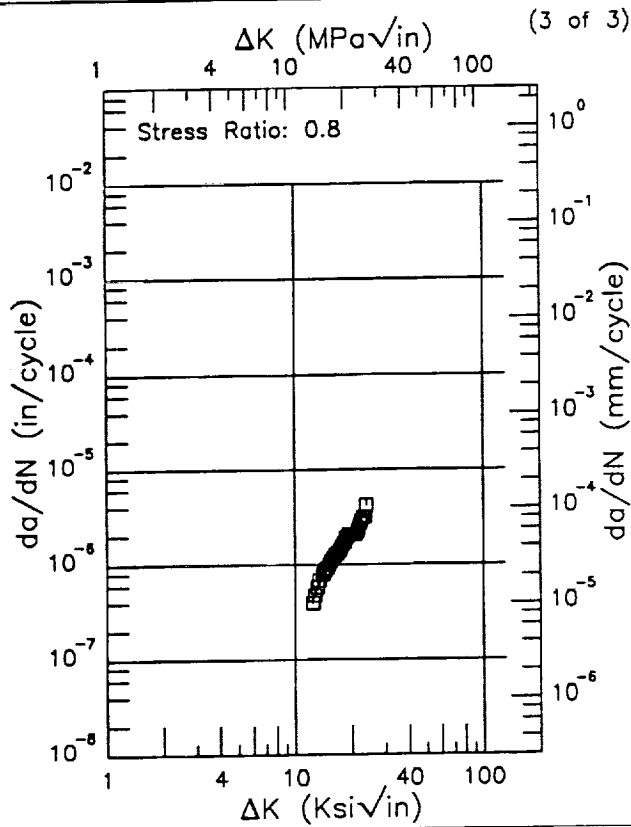
RMS %  
 Error  
 2.15

Life Prediction Ratio Summary

0. .5 .8 1.25 2.---

Condition/Ht: -99  
 Form: 0.366 in. Plate  
 Specimen Type: WOL  
 Orientation: T-L  
 Frequency: 5 Hz  
 Environment: LAB AIR; RT

Yield Strength: 104.2 ksi  
 Ult. Strength: 116 ksi  
 Specimen Thk: 0.366 in.  
 Specimen Width: 5.098 in.  
 Ref: NRL00



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
12.36 (min)	0.418
13.	0.551
16.	1.22
20.	2.03
23.70 (max)	3.50

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
--------------------------------------	-------------------------------

RMS %  
 Error  
 6.67

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

RMS %  
 Error

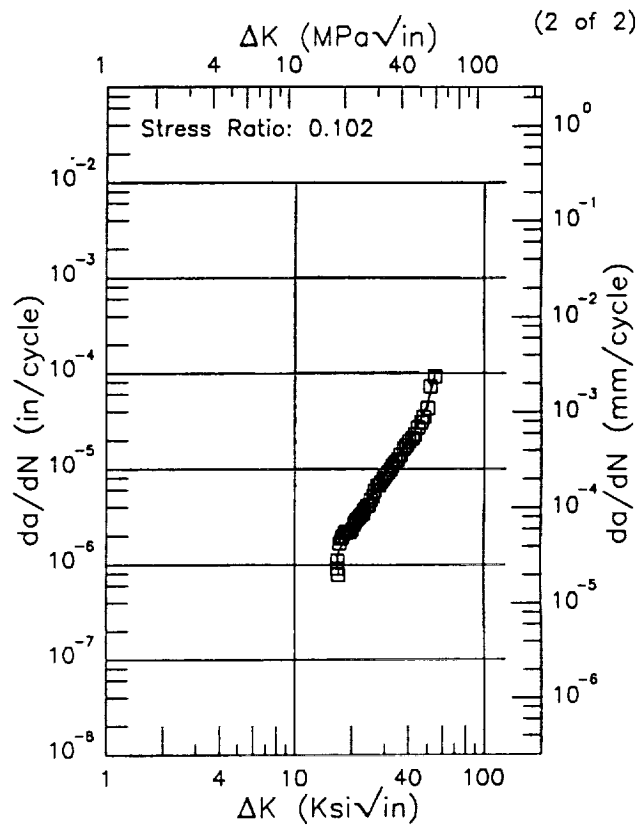
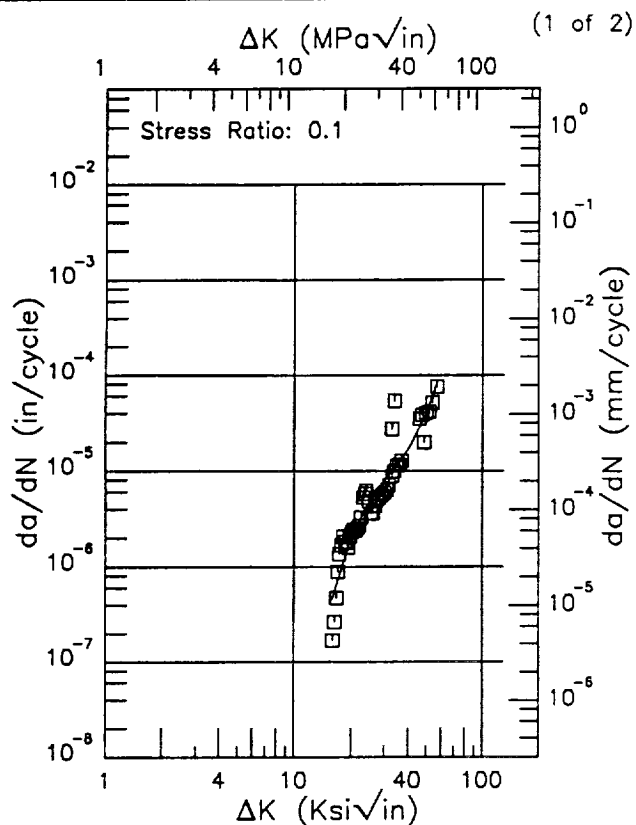
Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

R | MAN-TEN |

Condition/Ht: -99  
Form:  
Specimen Type: CT  
Orientation:  
Frequency: 5 Hz  
Environment: LAB AIR; RT

Yield Strength: 52.1 ksi  
Ult. Strength: 84 ksi  
Specimen Thk: 0.372 - 0.375 in.  
Specimen Width: 2.55 in.  
Ref: UT001



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
15.92 (min)	0.460
16.	0.480
20.	1.99
25.	4.81
30.	7.92
35.	11.6
40.	16.8
50.	39.9
56.66 (max)	80.5

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
16.72 (min)	1.25
20.	2.49
25.	4.63
30.	8.13
35.	13.2
40.	18.5
50.	46.8
54.91 (max)	96.4

RMS %  
Error  
73.72

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS %  
Error  
11.24

Life Prediction Ratio Summary

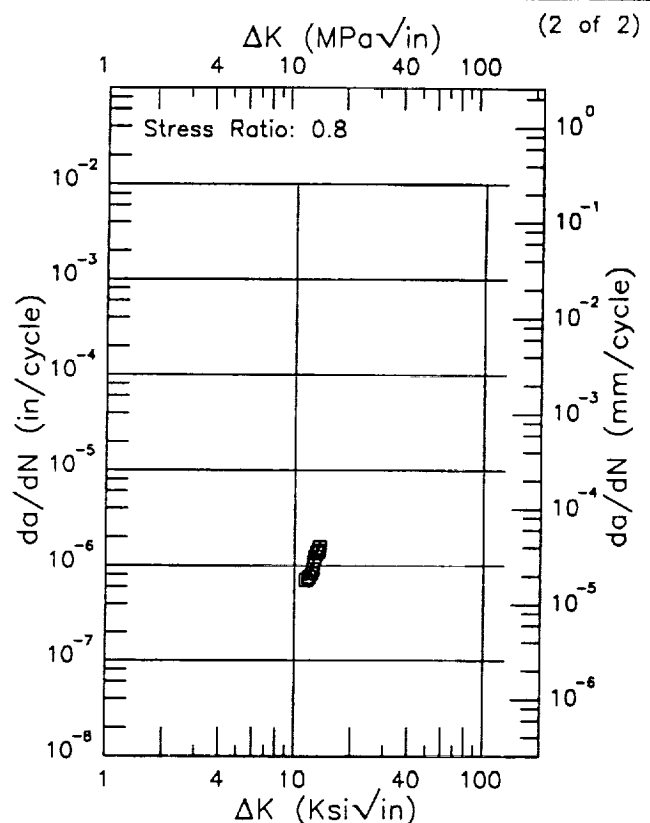
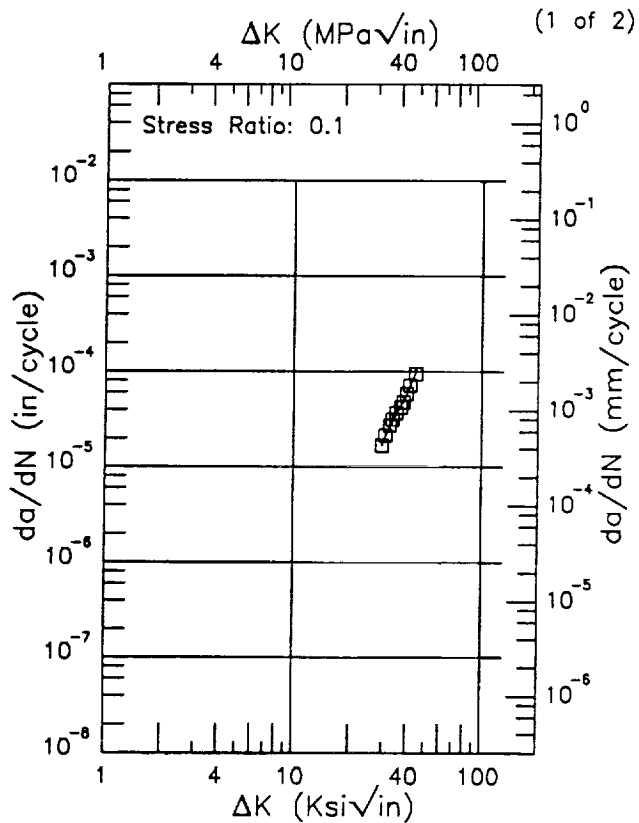
0. .5 .8 1.25 2.

B1-140

R MIL-S-16113, TYPE I

Condition/Ht: -99  
 Form: 0.472 in. Plate  
 Specimen Type: WOL  
 Orientation: T-L  
 Frequency: 0.5 Hz  
 Environment: 3.5% NACL; RT

Yield Strength: 57.6 ksi  
 Ult. Strength: 61 ksi  
 Specimen Thk: 0.472 in.  
 Specimen Width: 5.098 in.  
 Ref: NRL00



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
29.37 (min)	17.1
30.	19.1
35.	36.3
40.	59.5
44.09 (max)	95.4

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
11.52 (min)	0.702
13.	1.33
13.54 (max)	1.50

RMS %  
 Error  
 3.42

Life Prediction Ratio Summary  
 0. .5 .8 1.25 2.----

RMS %  
 Error  
 7.69

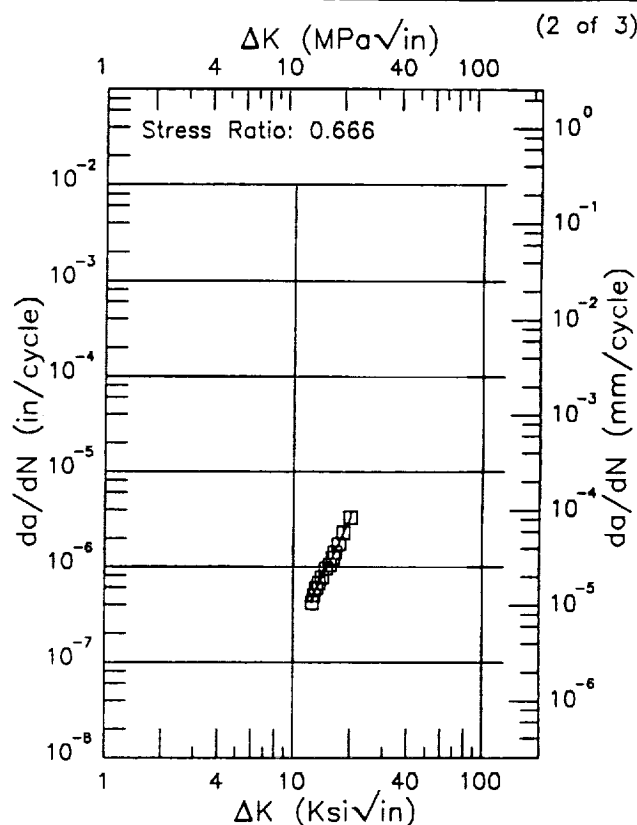
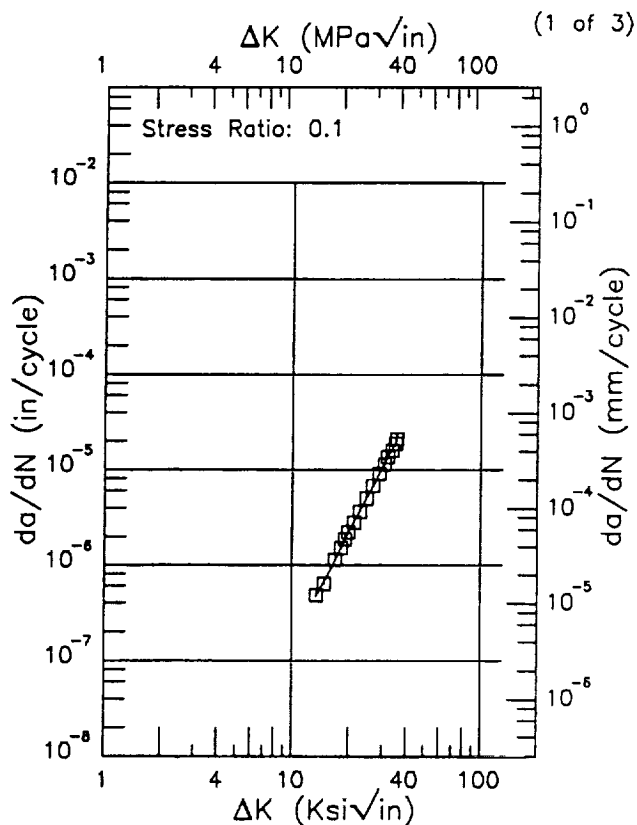
Life Prediction Ratio Summary  
 0. .5 .8 1.25 2.----

B1-142

# MIL-S-16113, TYPE I

Condition/Ht: -99  
Form: 0.472 in. Plate  
Specimen Type: WOL  
Orientation: T-L  
Frequency: 5 Hz  
Environment: LAB AIR; RT

Yield Strength: 57.6 ksi  
Ult. Strength: 61 ksi  
Specimen Thk: 0.472 in.  
Specimen Width: 5.098 in.  
Ref: NRL00



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
13.35 (min)	0.466
16.	0.900
20.	2.30
25.	5.30
30.	10.7
35.	19.0
35.53 (max)	20.4

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
12.56 (min)	0.416
13.	0.526
16.	1.17
20.	3.22
20.10 (max)	3.28

RMS %  
Error  
2.08

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

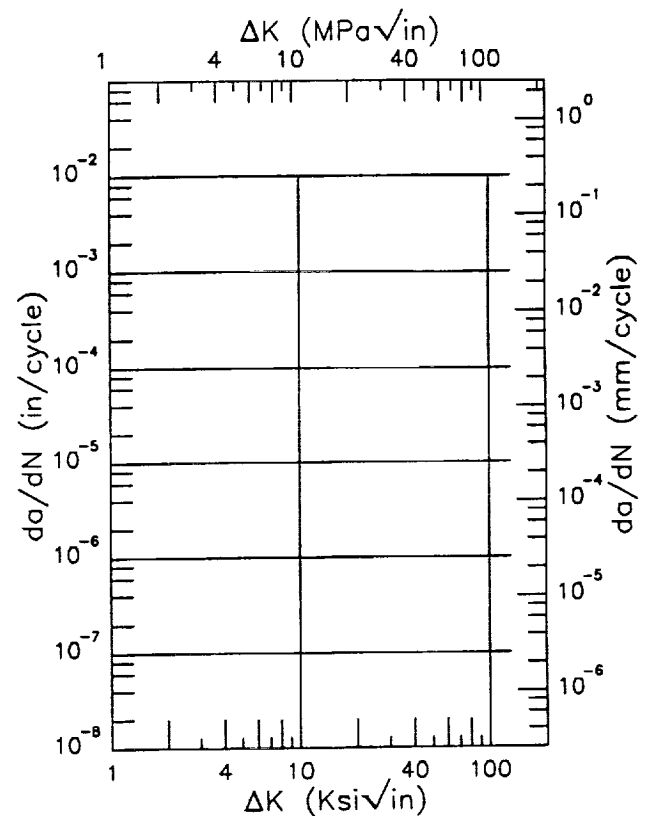
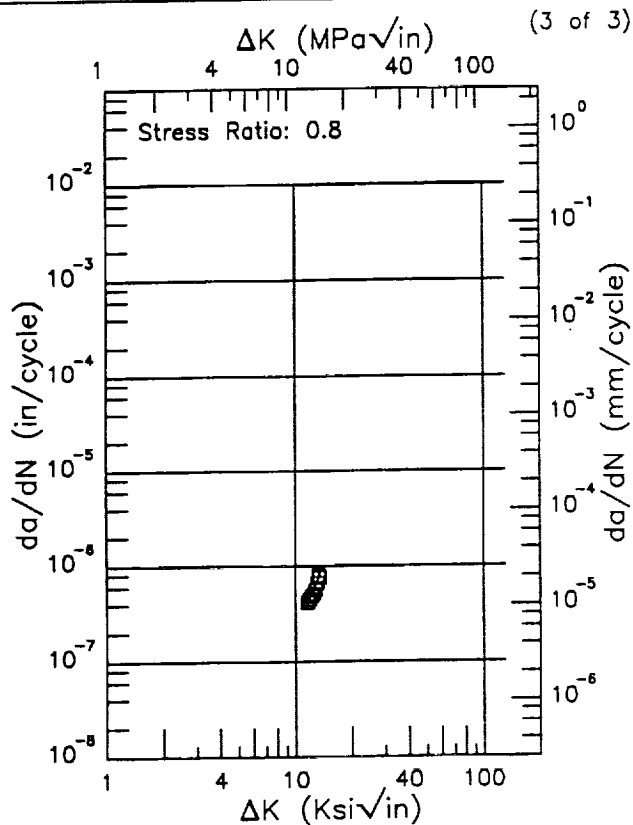
RMS %  
Error  
2.85

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

Condition/Ht: -99  
 Form: 0.472 in. Plate  
 Specimen Type: WOL  
 Orientation: T-L  
 Frequency: 5 Hz  
 Environment: LAB AIR; RT

Yield Strength: 57.6 ksi  
 Ult. Strength: 61 ksi  
 Specimen Thk: 0.472 in.  
 Specimen Width: 5.098 in.  
 Ref: NRL00



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
11.50 (min)	0.407
13.	0.689
13.41 (max)	0.770

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)

RMS %  
 Error  
 6.82

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

RMS %  
 Error

Life Prediction Ratio Summary

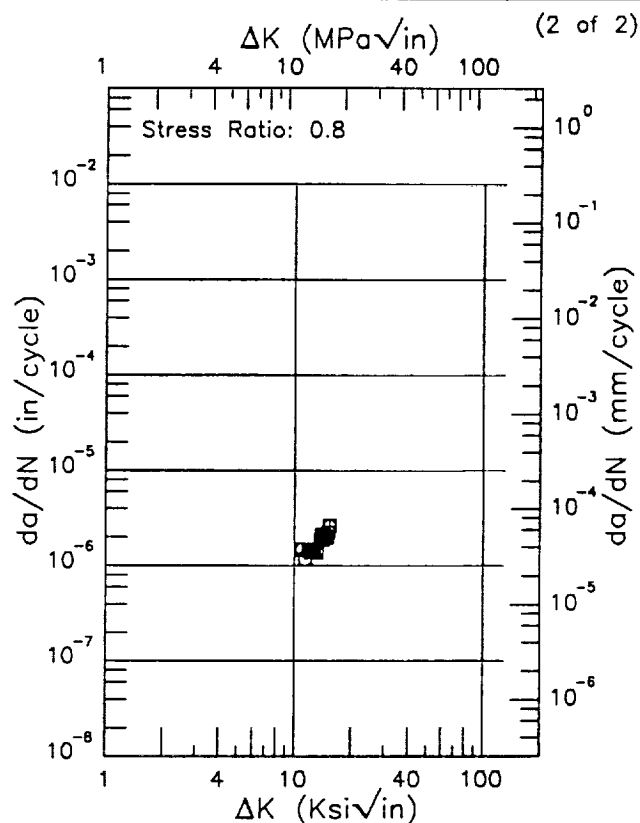
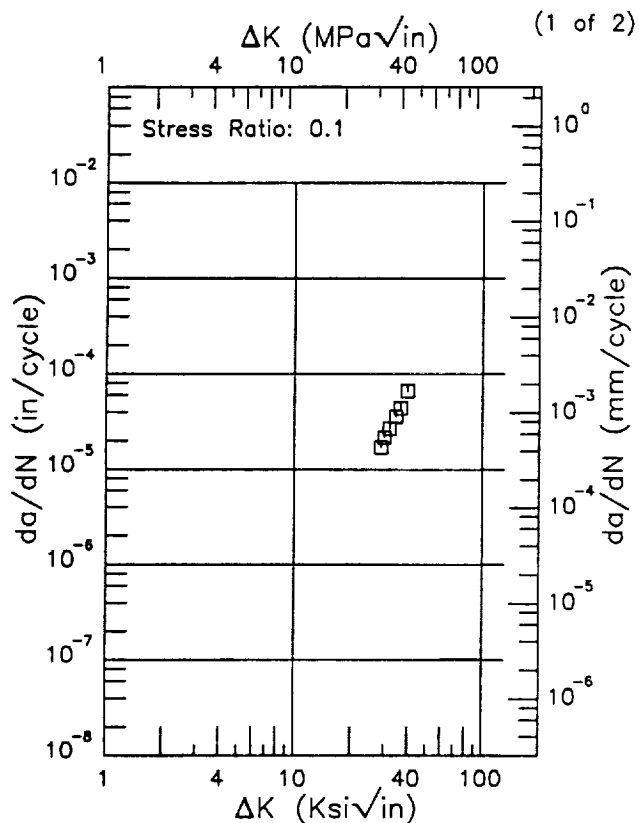
0. .5 .8 1.25 2. ---



# R MIL-S-22698, CLASS A

Condition/Ht: -99  
 Form: 0.472 in. Plate  
 Specimen Type: WOL  
 Orientation: T-L  
 Frequency: 0.5 Hz  
 Environment: 3.5% NACL; RT

Yield Strength: 40.1 ksi  
 Ult. Strength: 68.5 ksi  
 Specimen Thk: 0.472 in.  
 Specimen Width: 5.098 in.  
 Ref: NRL00



ΔK (Ksi√in)      da/dN (10<sup>-6</sup>in/cycle)

ΔK (Ksi√in)      da/dN (10<sup>-6</sup>in/cycle)

10.97 (min)	1.43
13.	1.38
15.32 (max)	2.58

RMS %  
Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.---

RMS %  
Error

8.92

Life Prediction Ratio Summary

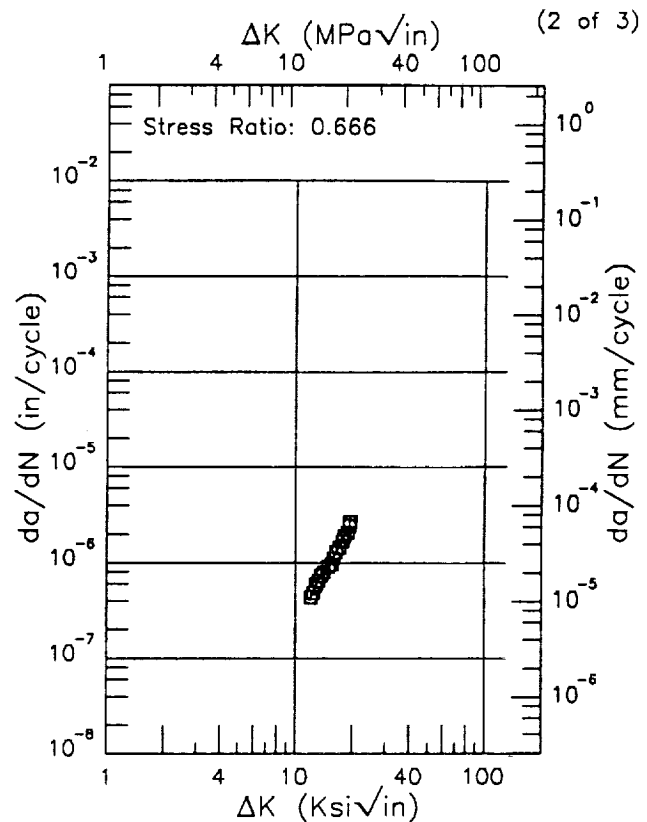
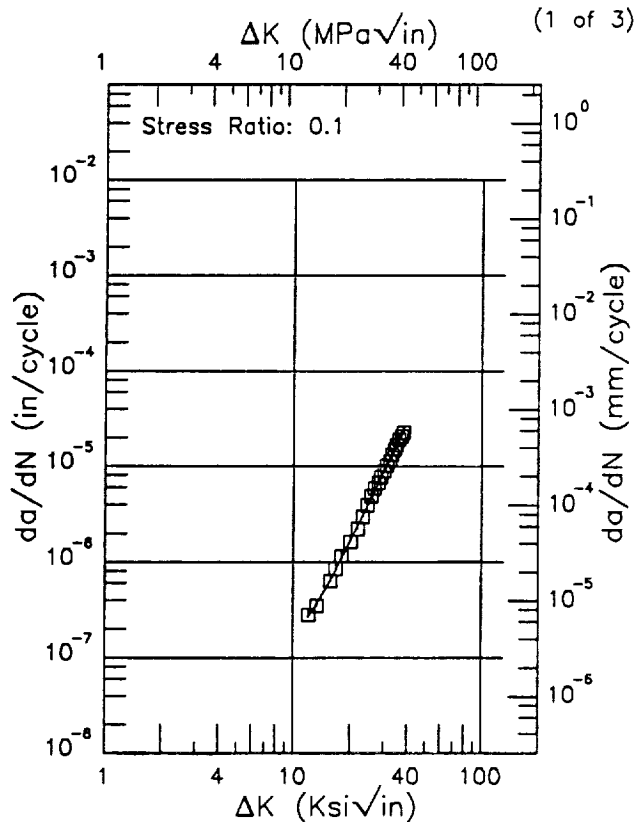
0. .5 .8 1.25 2.---

B1-146

R MIL-S-22698, CLASS A

Condition/Ht: -99  
Form: 0.472 in. Plate  
Specimen Type: WOL  
Orientation: T-L  
Frequency: 5 Hz  
Environment: LAB AIR; RT

Yield Strength: 40.1 ksi  
Ult. Strength: 68.5 ksi  
Specimen Thk: 0.472 in.  
Specimen Width: 5.098 in.  
Ref: NRL00



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
12.00 (min)	0.262
13.	0.333
16.	0.685
20.	1.65
25.	4.13
30.	8.74
35.	16.2
38.12 (max)	22.7

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
12.01 (min)	0.413
13.	0.600
16.	1.14
19.49 (max)	2.49

RMS %  
Error  
2.94

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS %  
Error  
3.37

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

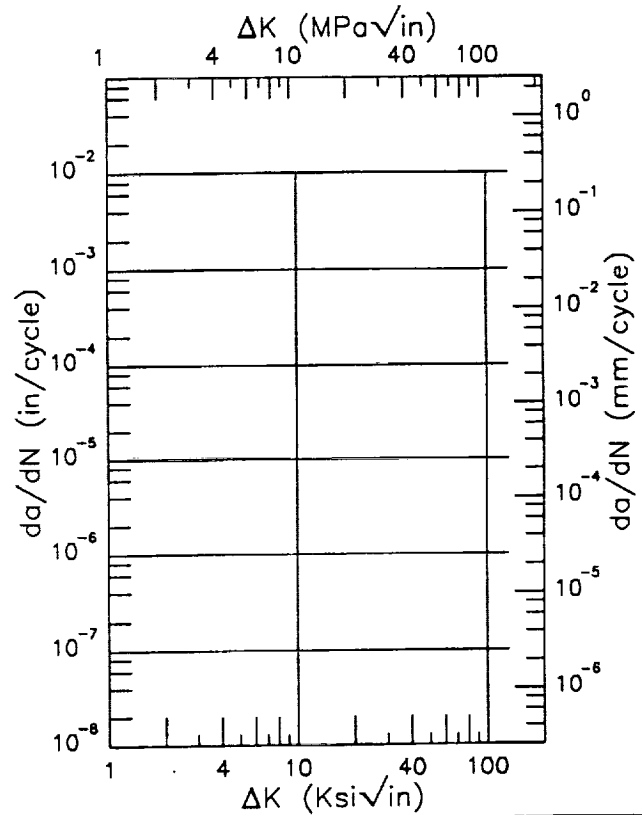
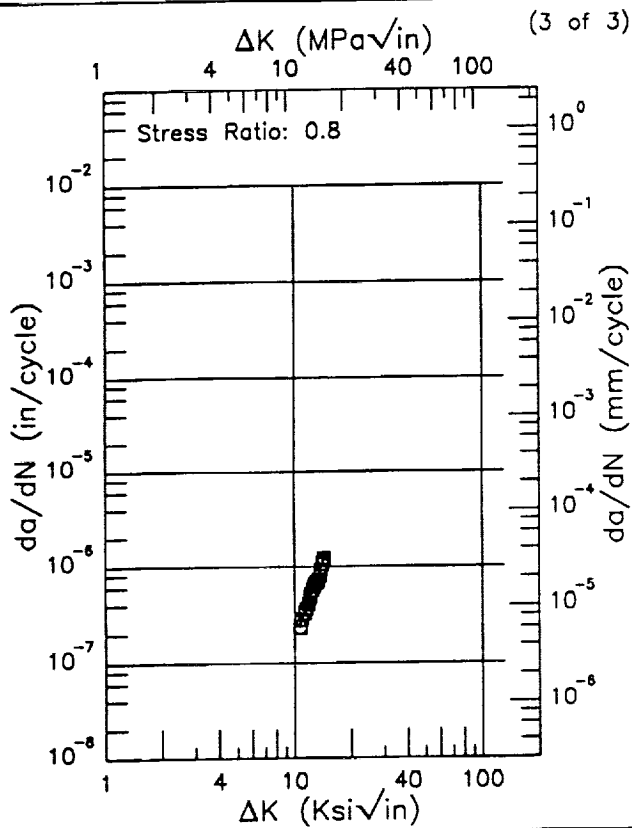
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B1-147

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Condition/Ht: -99  
 Form: 0.472 in. Plate  
 Specimen Type: WOL  
 Orientation: T-L  
 Frequency: 5 Hz  
 Environment: LAB AIR; RT

Yield Strength: 40.1 ksi  
 Ult. Strength: 68.5 ksi  
 Specimen Thk: 0.472 in.  
 Specimen Width: 5.098 in.  
 Ref: NRL00



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
10.64 (min)	0.239
13.	0.683
14.32 (max)	1.21

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)

RMS %  
 Error  
 4.90

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS %  
 Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

R MIL-S-23284, CLASS 1

Condition/Ht: -99

Form:

Specimen Type: CCP (max load specified)

Orientation: L-R

Frequency: 0.5 Hz

Environment: LAB AIR; RT

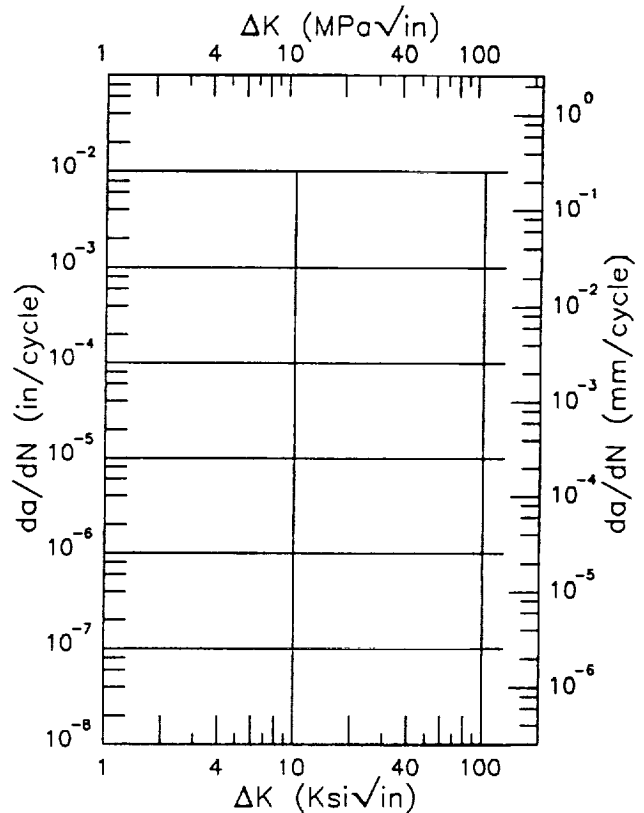
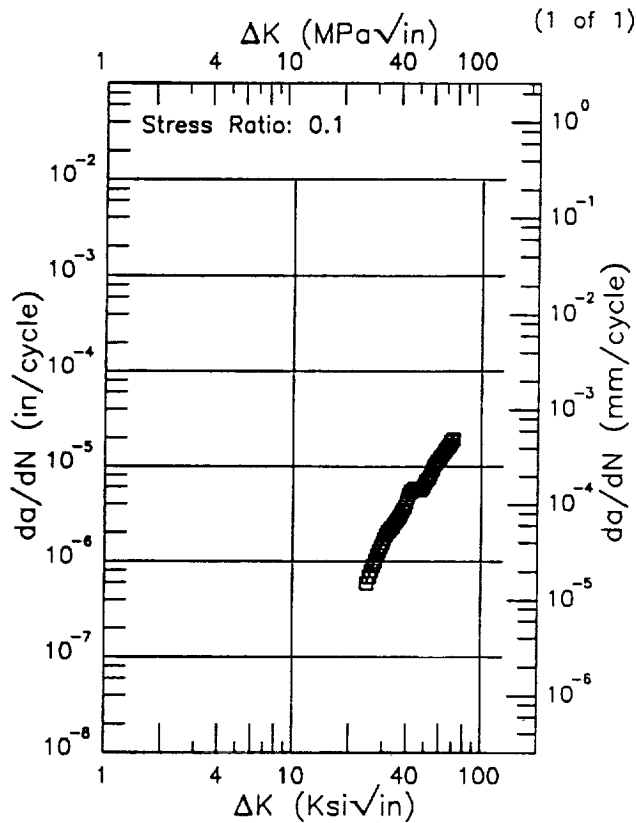
Yield Strength: 87 ksi

Ult. Strength:

Specimen Thk: 0.502 in.

Specimen Width: 1.875 in.

Ref: DT004



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
24.58 (min)	0.605
25.	0.660
30.	1.54
35.	2.78
40.	4.15
50.	6.99
60.	12.2
70.	18.5
70.20 (max)	18.5

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
-------------	-----------------------------------

RMS %  
Error  
6.09

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

RMS %  
Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

Condition/Ht: -99

Form:

Specimen Type: CCP (max load specified)

Orientation: L-R

Frequency: 5 Hz

Environment: LAB AIR; RT

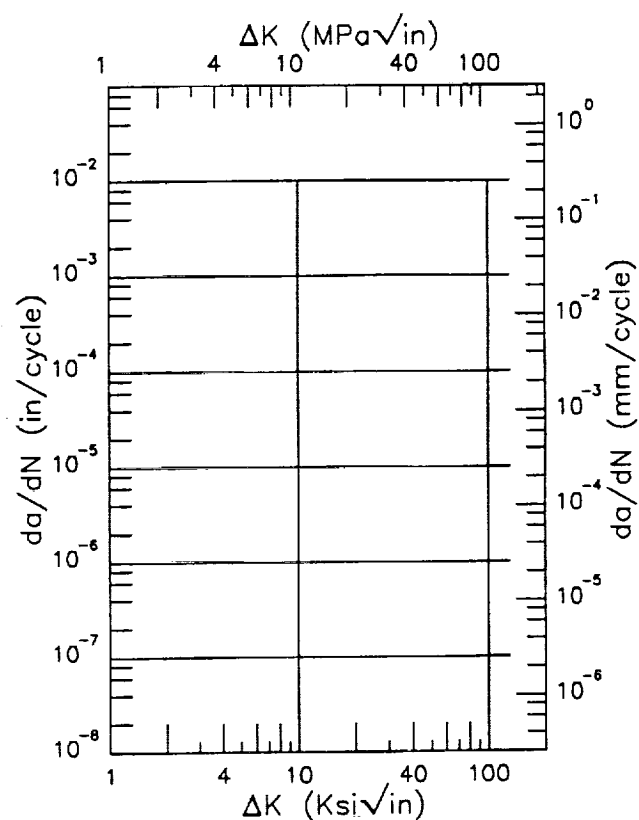
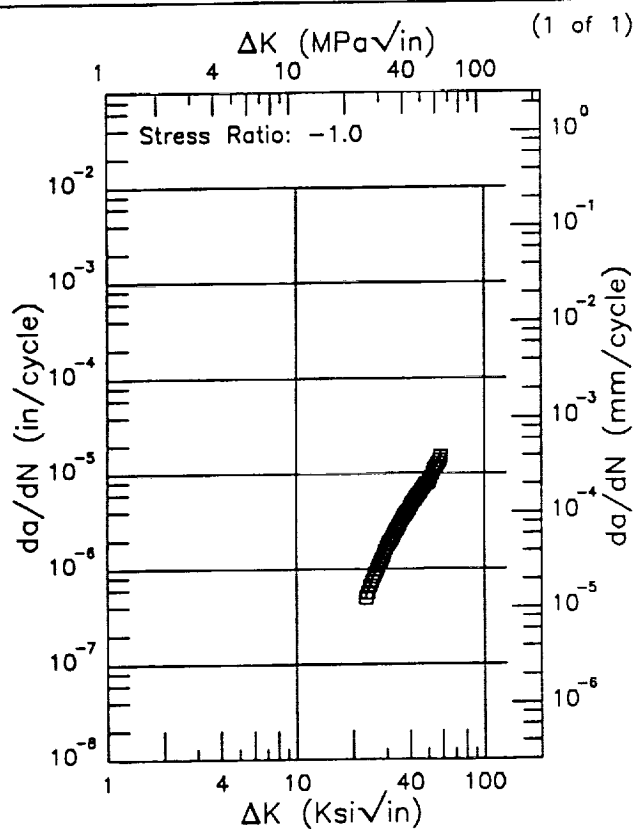
Yield Strength:

Ult. Strength:

Specimen Thk: 0.501 in.

Specimen Width: 1.875 in.

Ref: DT004



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
23.21 (min)	0.501
25.	0.744
30.	1.67
35.	2.96
40.	4.56
50.	8.46
58.43 (max)	15.0

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
--------------------------------------	-----------------------------------

RMS %  
Error  
1.54

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS %  
Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

# MIL-S-23284, CLASS 2

Condition/Ht: -99

Form:

Specimen Type: CCP (max load specified)

Orientation: L-R

Frequency: 5 Hz

Environment: LAB AIR; RT

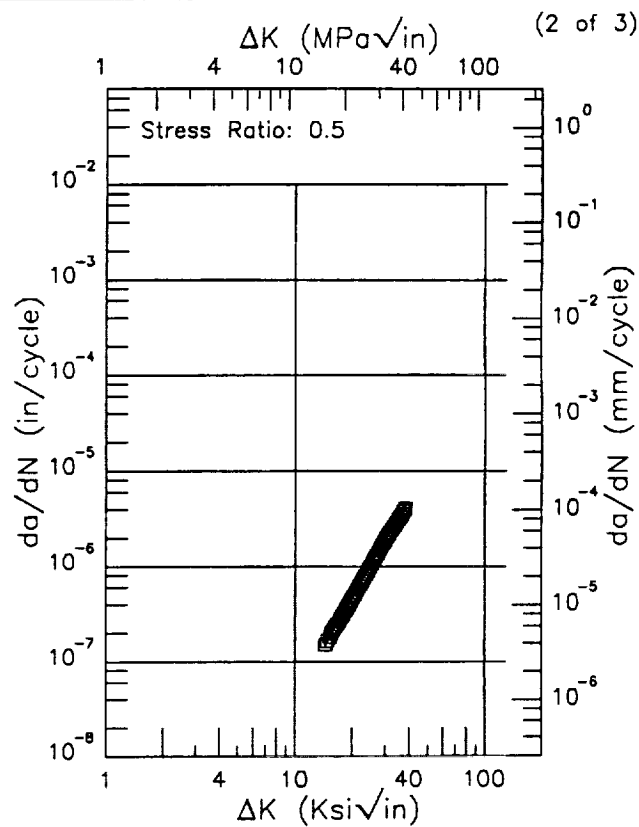
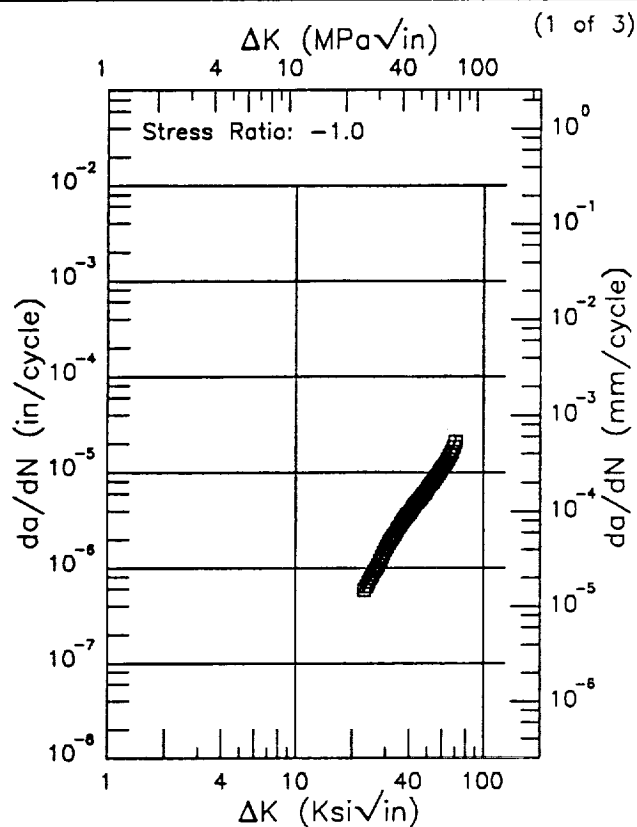
Yield Strength:

Ult. Strength:

Specimen Thk: 0.502 - 0.504 in.

Specimen Width: 1.875 in.

Ref: DT004



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
23.04 (min)	0.575
25.	0.773
30.	1.55
35.	2.65
40.	3.85
50.	6.77
60.	11.2
70.	20.2
70.14 (max)	20.4

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
14.47 (min)	0.149
16.	0.215
20.	0.455
25.	1.02
30.	1.94
35.	3.12
37.98 (max)	4.01

RMS %  
Error  
1.46

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

RMS %  
Error  
0.57

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

Condition/Ht: -99

Form:

Specimen Type: CCP (max load specified)

Orientation: L-R

Frequency: 5 Hz

Environment: LAB AIR; RT

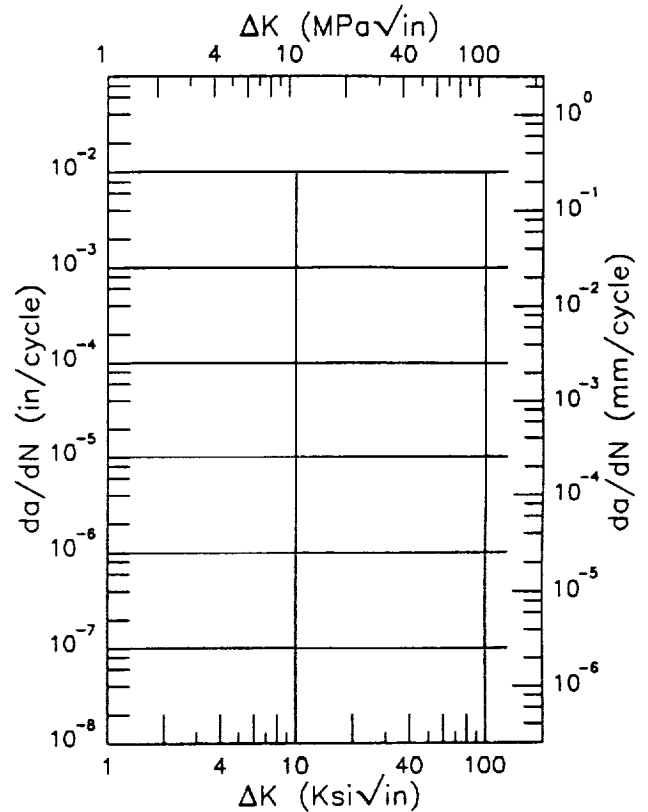
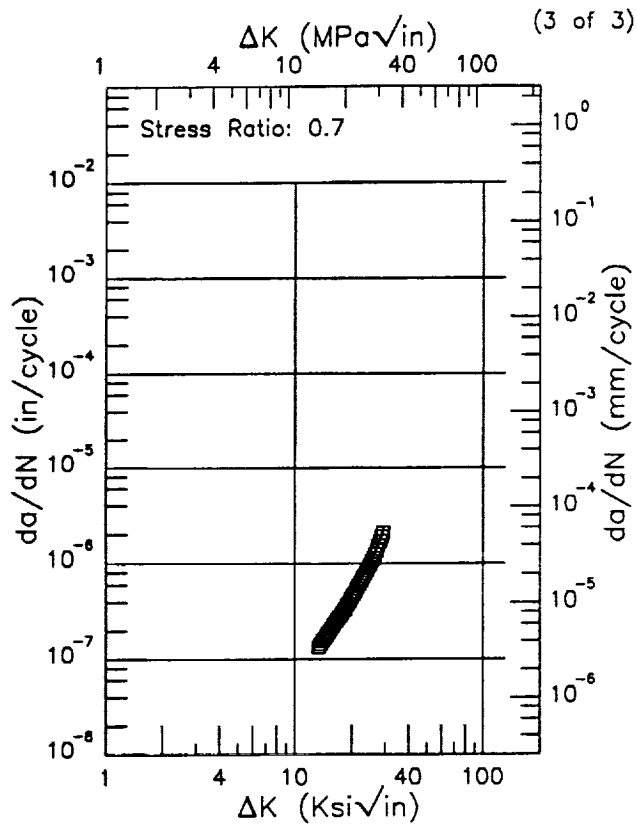
Yield Strength:

Ult. Strength:

Specimen Thk: 0.502 - 0.504 in.

Specimen Width: 1.875 in.

Ref: DT004



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
13.33 (min)	0.133
16.	0.230
20.	0.447
25.	0.992
29.19 (max)	2.01

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
--------------------------------------	-----------------------------------

RMS %  
Error  
1.53

Life Prediction Ratio Summary

0. .5 .8 1.25 2. □

RMS %  
Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2. □



R MIL-S-23284, CLASS 2

Condition/Ht: -99

Form:

Specimen Type: CCP (max load specified)

Orientation:

Frequency: 5 Hz

Environment: LAB AIR; RT

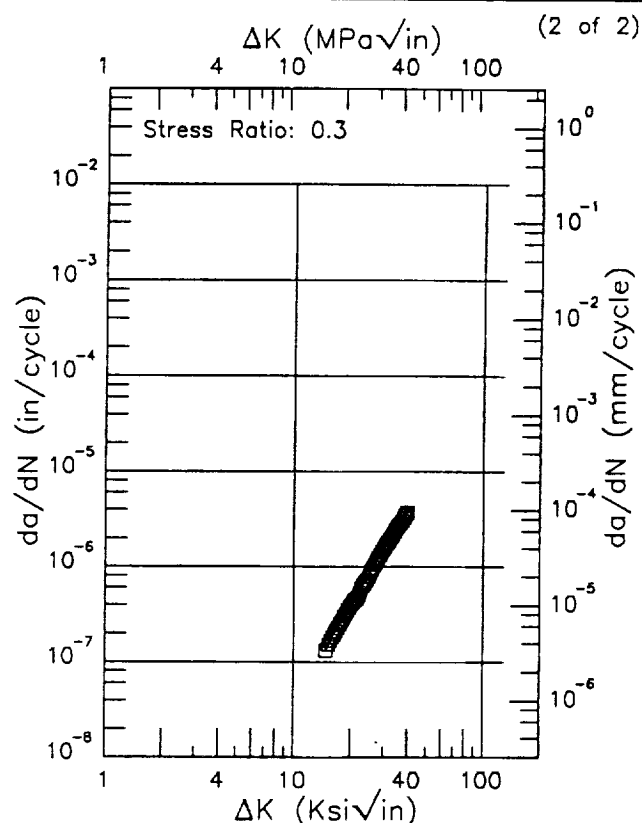
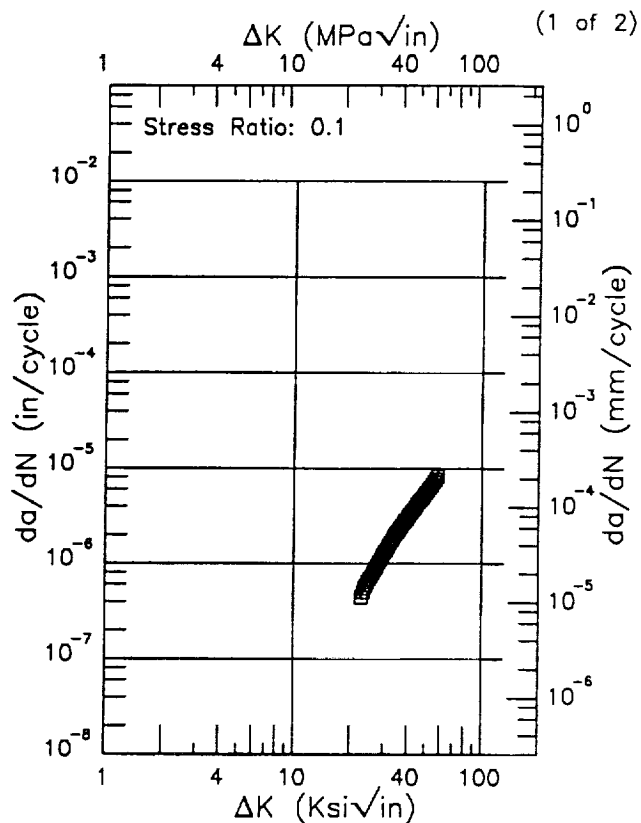
Yield Strength:

Ult. Strength:

Specimen Thk: 0.5 - 0.502 in.

Specimen Width: 1.875 in.

Ref: DT004



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
22.64 (min)	0.453
25.	0.666
30.	1.28
35.	2.08
40.	3.03
50.	5.49
57.71 (max)	8.26

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
14.84 (min)	0.132
16.	0.180
20.	0.383
25.	0.818
30.	1.59
35.	2.56
39.49 (max)	3.68

RMS %  
Error  
0.77

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS %  
Error  
1.78

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

B1-154

R | SA333 |

Condition/Ht: -99

Form:

Specimen Type:

Orientation: L-T

Frequency: 0. Hz

Environment: BWR WATER;550°F

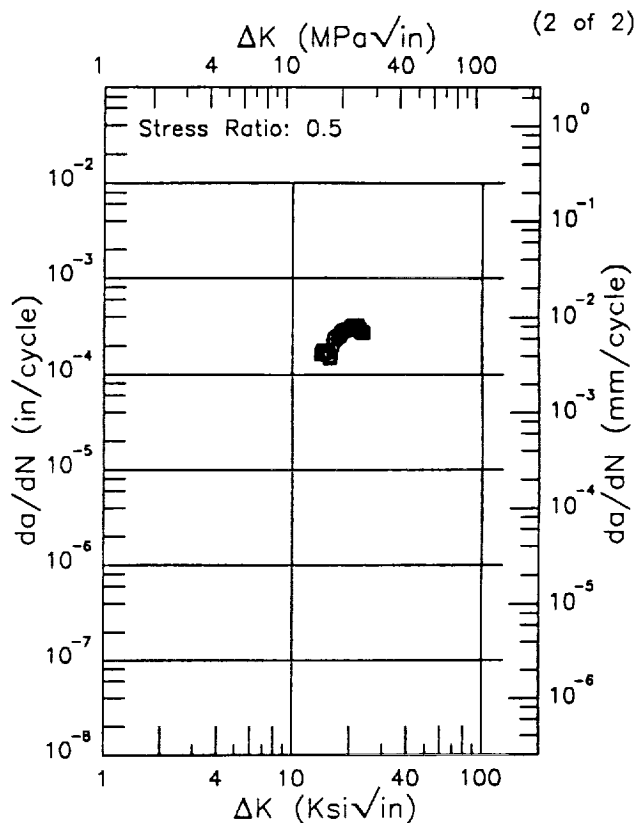
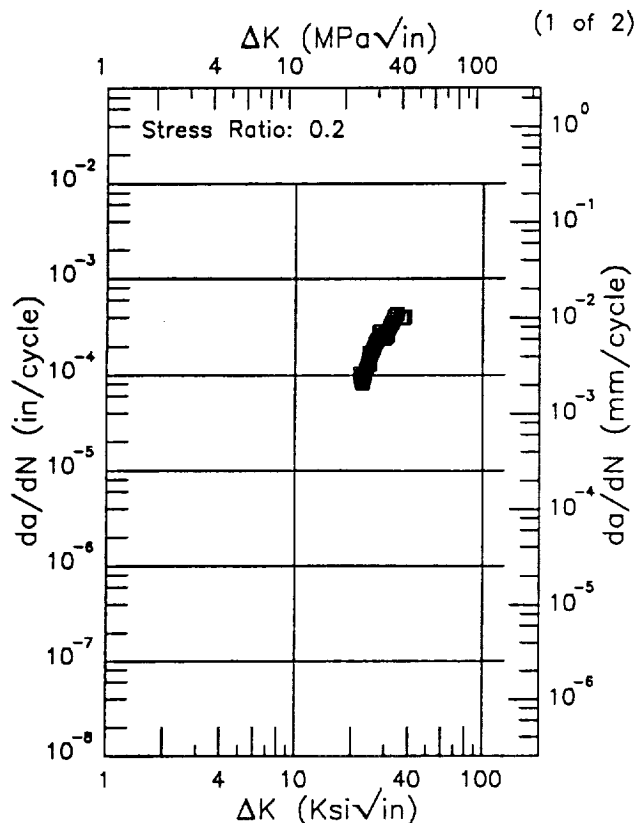
Yield Strength: 37 ksi

Ult. Strength: 60 ksi

Specimen Thk: 1 in.

Specimen Width: 2 in.

Ref: EPGEF



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
21.94 (min)	78.3
25.	155.
30.	288.
35.	385.
38.03 (max)	423.

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
14.11 (min)	164.
16.	193.
20.	312.
23.52 (max)	257.

RMS %  
Error  
10.43

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS %  
Error  
8.54

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

B1-155

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Condition/Ht: -99

Form:

Specimen Type:

Orientation: L-T

Stress Ratio: 0.5

Frequency: 0. Hz

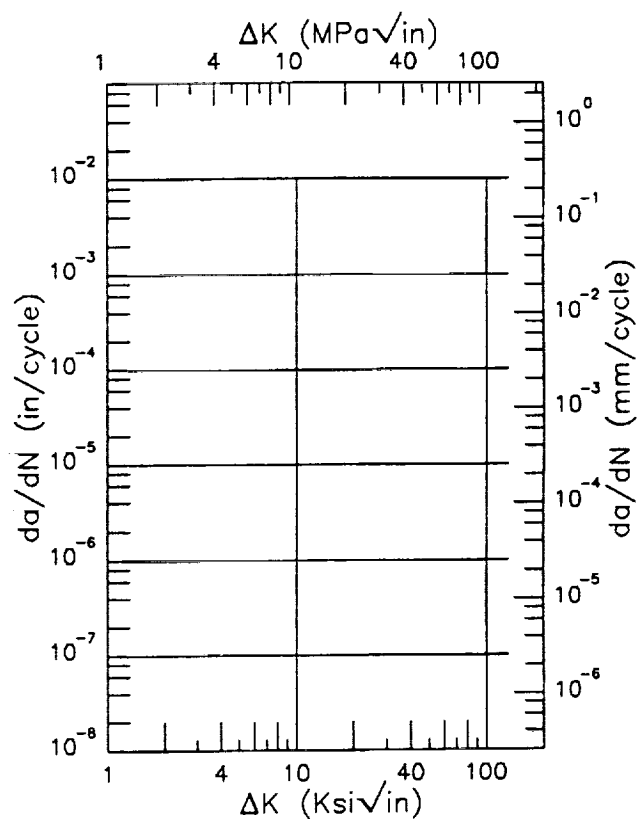
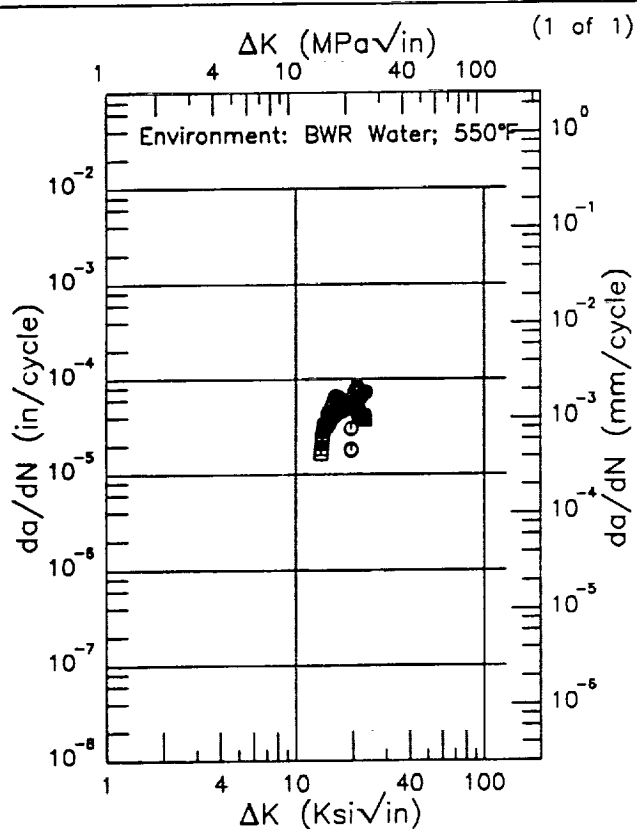
Yield Strength: 37 ksi

Ult. Strength: 60 ksi

Specimen Thk: 1 in.

Specimen Width: 2 in.

Ref: EPGEF



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ (10 <sup>-6</sup> in/cycle)
13.52 (min)	21.2
16.	50.9
20.	55.5
23.43 (max)	71.5

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ (10 <sup>-6</sup> in/cycle)
--------------------------------------	-------------------------------------

RMS %  
Error

21.06

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS %  
Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

F SA333

Condition/Ht: -99

Form:

Specimen Type:

Orientation: L-T

Stress Ratio: 0.5

Environment: BWR WATER;453°F

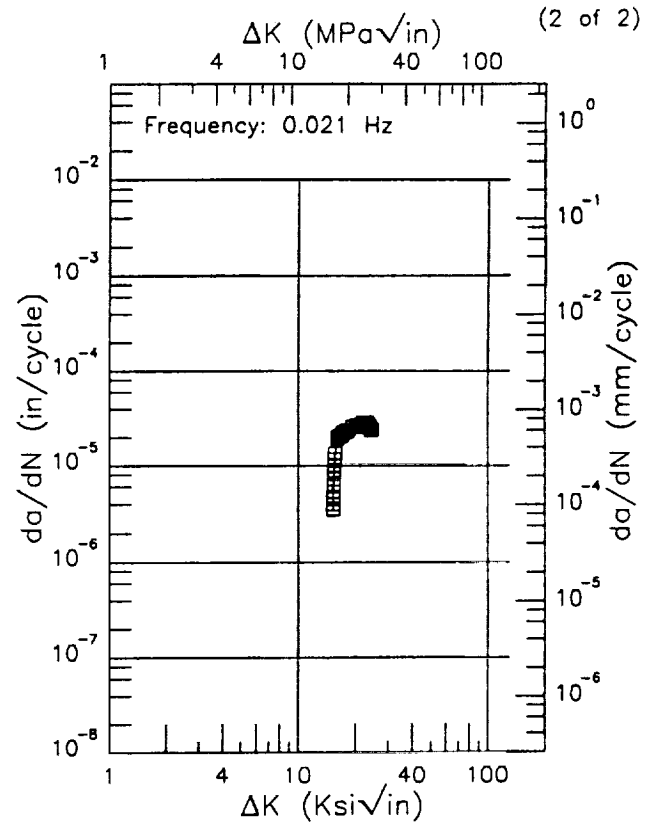
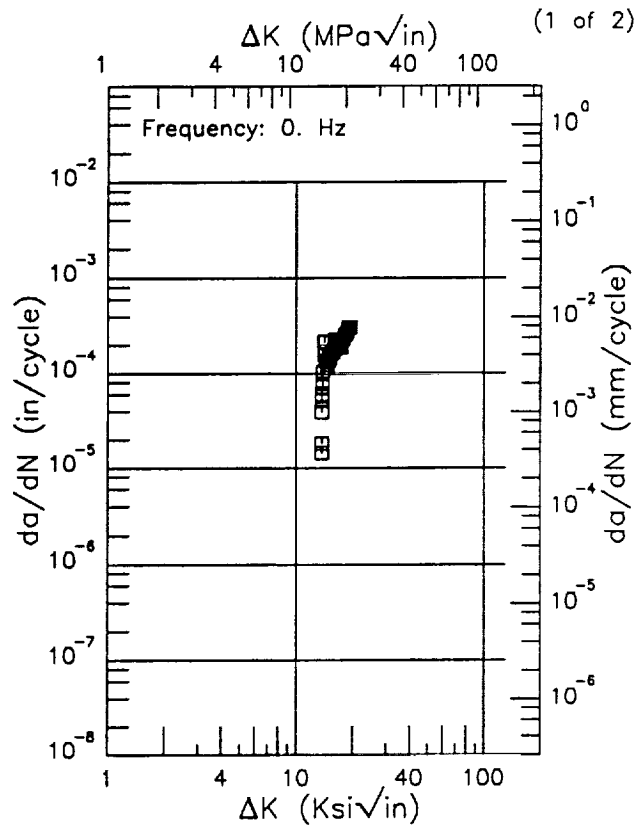
Yield Strength: 37 ksi

Ult. Strength: 60 ksi

Specimen Thk: 1 in.

Specimen Width: 2 in.

Ref: EPGEF



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
13.56 (min)	91.4
16.	193.
19.16 (max)	334.

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
15.24 (min)	5.58
16.	17.8
20.	26.8
24.38 (max)	21.7

RMS %  
Error  
28.30

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

RMS %  
Error  
15.75

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

Condition/Ht: -99

Form:

Specimen Type:

Orientation: T-L

Frequency: 0. Hz

Environment: BWR WATER;550°F

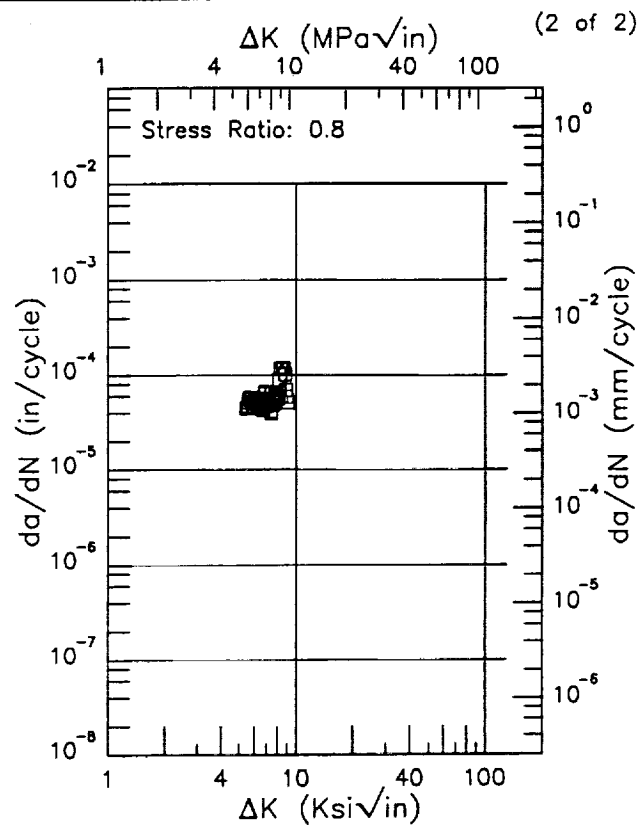
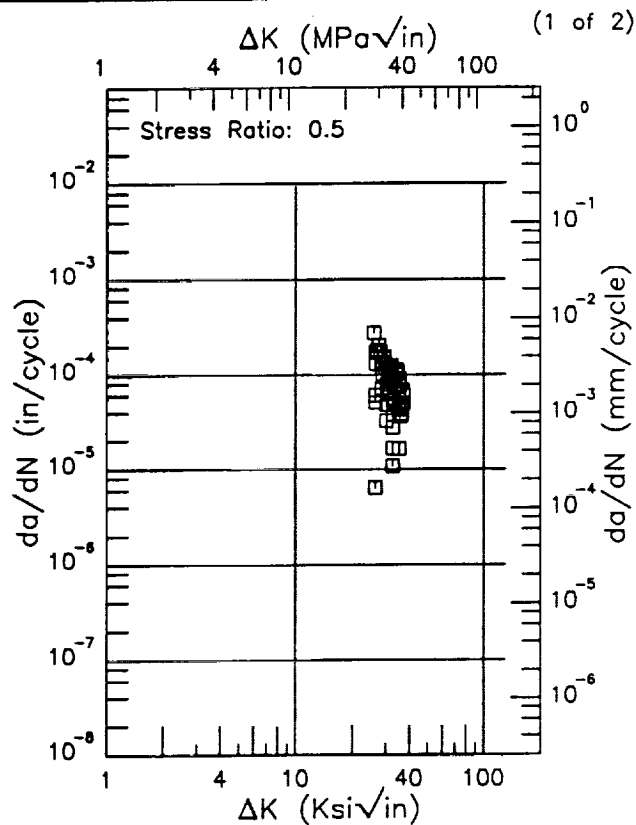
Yield Strength: 37 ksi

Ult. Strength: 60 ksi

Specimen Thk: 1 in.

Specimen Width: 2 in.

Ref: EPGEF



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
25.93 (min)	163.
30.	108.
35.	61.7
37.30 (max)	56.2

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
5.42 (min)	52.2
6.	50.4
7.	54.9
8.	68.7
9.00 (max)	95.7

RMS %  
Error  
41.09

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS %  
Error  
17.93

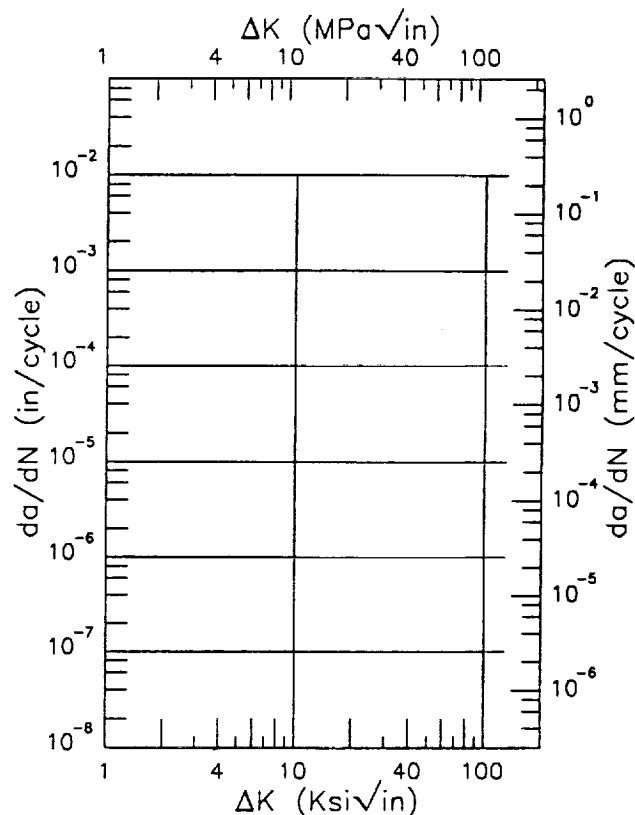
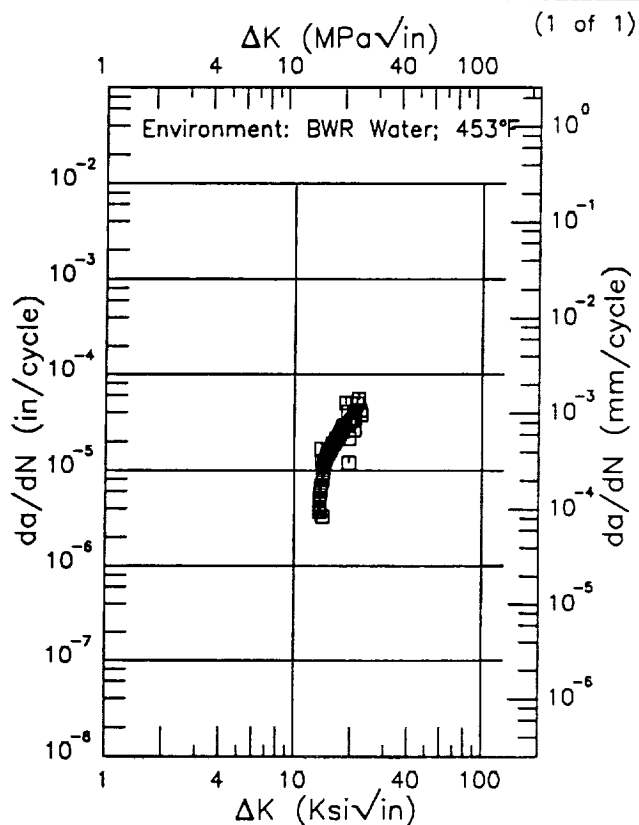
Life Prediction Ratio Summary

0. .5 .8 1.25 2.

E | SA333 |

Condition/Ht: -99  
 Form:  
 Specimen Type:  
 Orientation: T-L  
 Stress Ratio: 0.5  
 Frequency: 0. Hz

Yield Strength: 37 ksi  
 Ult. Strength: 60 ksi  
 Specimen Thk: 1 in.  
 Specimen Width: 2 in.  
 Ref: EPGEF



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
13.51 (min)	6.17
16.	19.8
20.	34.8
22.52 (max)	49.5

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
--------------------------------------	-------------------------------

RMS %  
 Error  
 24.99

Life Prediction Ratio Summary

0. .5 .8 1.25 2.---

RMS %  
 Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.---

SA333

F

Condition/Ht: -99

Form:

Specimen Type:

Orientation: T-L

Stress Ratio: 0.5

Environment: BWR WATER; 550°F

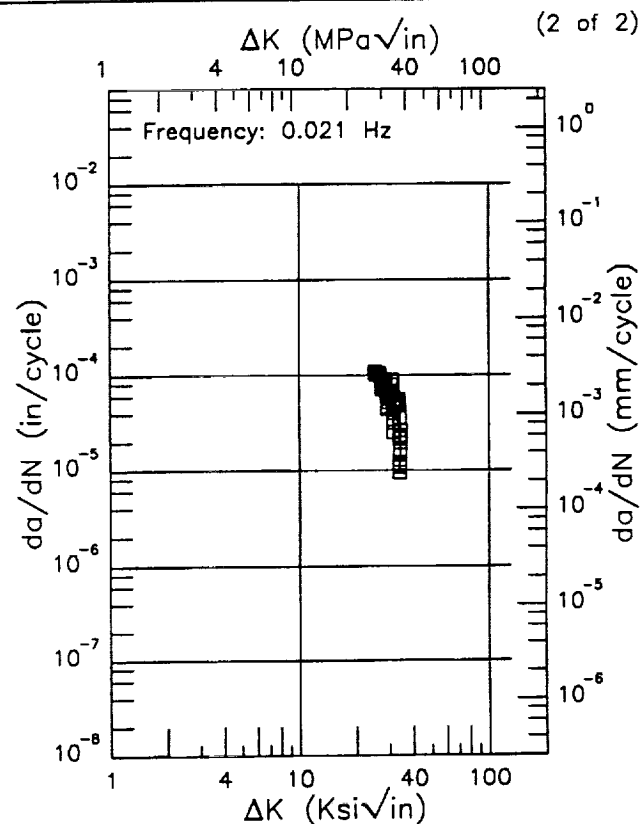
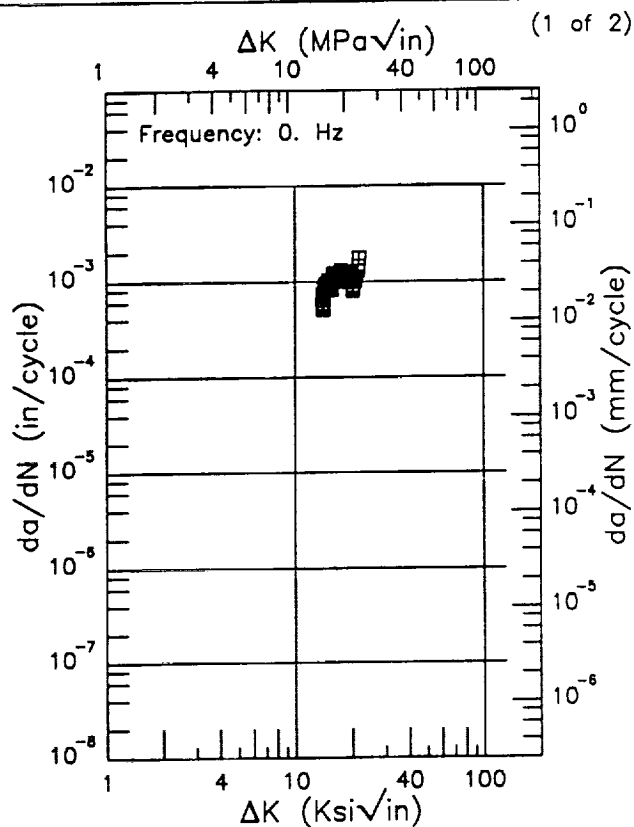
Yield Strength: 37 ksi

Ult. Strength: 60 ksi

Specimen Thk: 1 in.

Specimen Width: 2 in.

Ref: EPGEF



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
13.84 (min)	633.
16.	1105.
20.	1120.
21.77 (max)	1276.

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
24.97 (min)	127.
25.	125.
30.	67.1
34.15 (max)	26.9

RMS %  
Error  
13.30

Life Prediction Ratio Summary

0. .5 .8 1.25 2.---

RMS %  
Error  
32.23

Life Prediction Ratio Summary

0. .5 .8 1.25 2.---



F | SA333 |

Condition/Ht: -99

Form:

Specimen Type:

Orientation: T-L

Stress Ratio: 0.5

Environment: BWR WATER;554°F

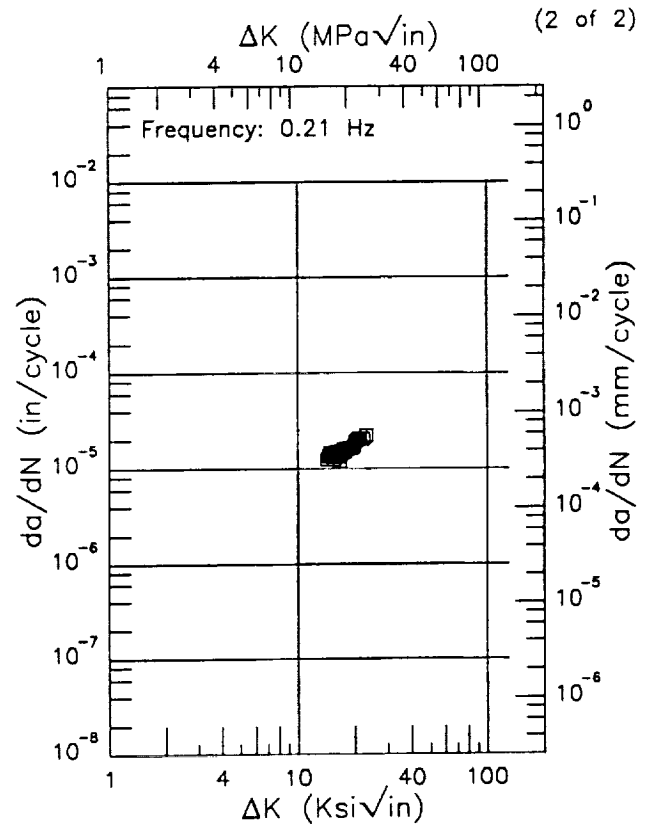
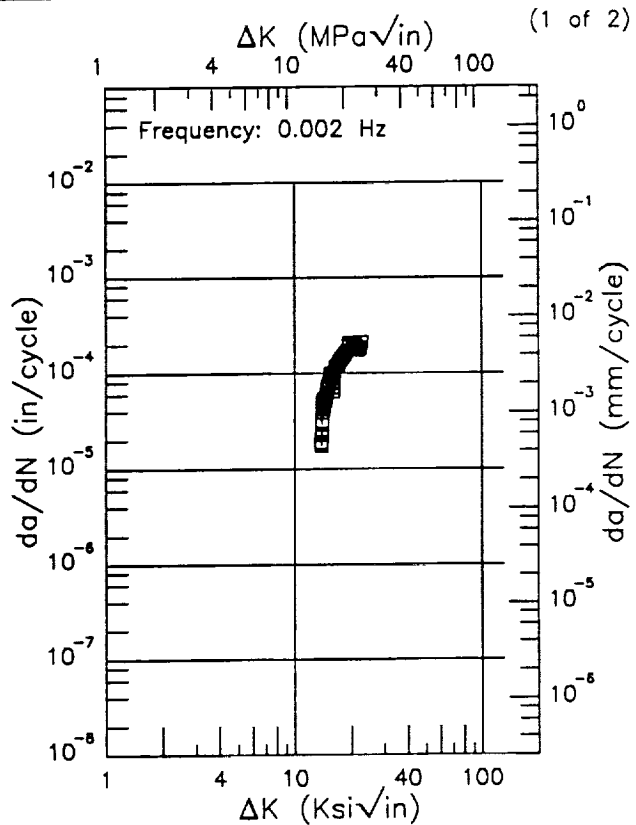
Yield Strength: 37 ksi

Ult. Strength: 60 ksi

Specimen Thk: 1 in.

Specimen Width: 2 in.

Ref: EPGEF



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
13.76 (min)	32.1
16.	99.7
20.	187.
22.53 (max)	189.

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
14.24 (min)	13.8
16.	13.8
20.	18.3
22.90 (max)	21.9

RMS %  
Error  
20.91

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

RMS %  
Error  
5.45

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

B1-162

R

SAE 1045

Condition/Ht: INDUCTION HARDENED

Form:

Specimen Type: CT

Orientation:

Frequency: 20 Hz

Environment: LAB AIR; RT

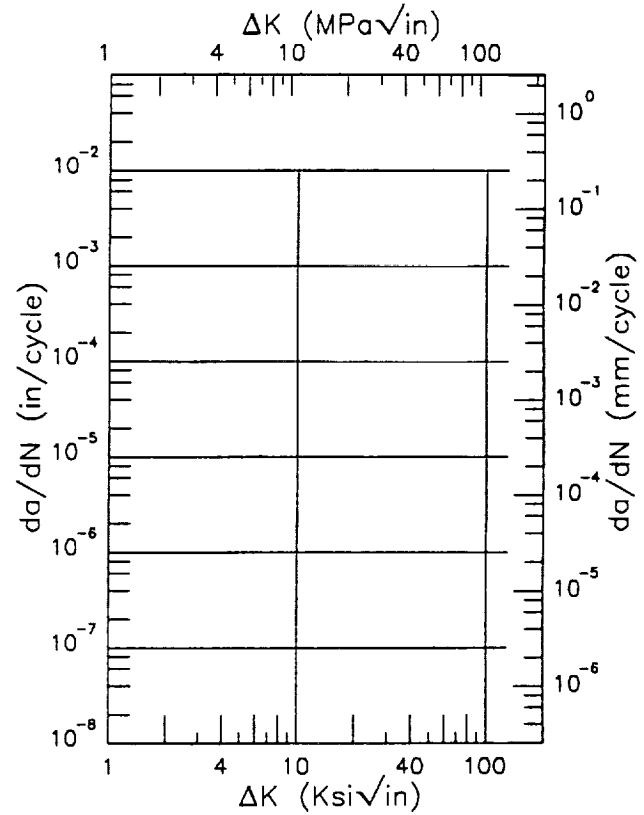
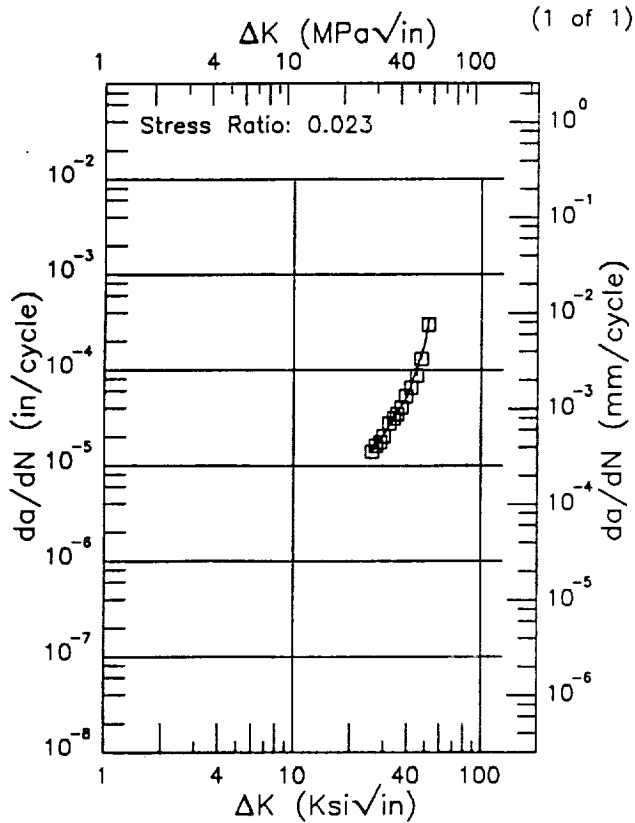
Yield Strength: 80 ksi

Ult. Strength: 125 ksi

Specimen Thk: 0.445 in.

Specimen Width: 1.8 in.

Ref: UT001



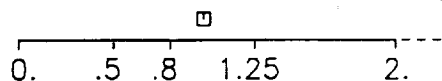
ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
25.83 (min)	14.1
30.	20.9
35.	34.7
40.	53.3
50.	203.
51.64 (max)	295.

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
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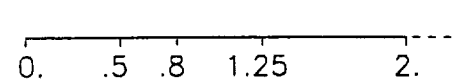
RMS %  
Error

7.29

Life Prediction Ratio Summary

RMS %  
Error

Life Prediction Ratio Summary



B1-163

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Condition/Ht: -99

Form:

Specimen Type: CT

Orientation:

Frequency: 20 Hz

Environment: LAB AIR; RT

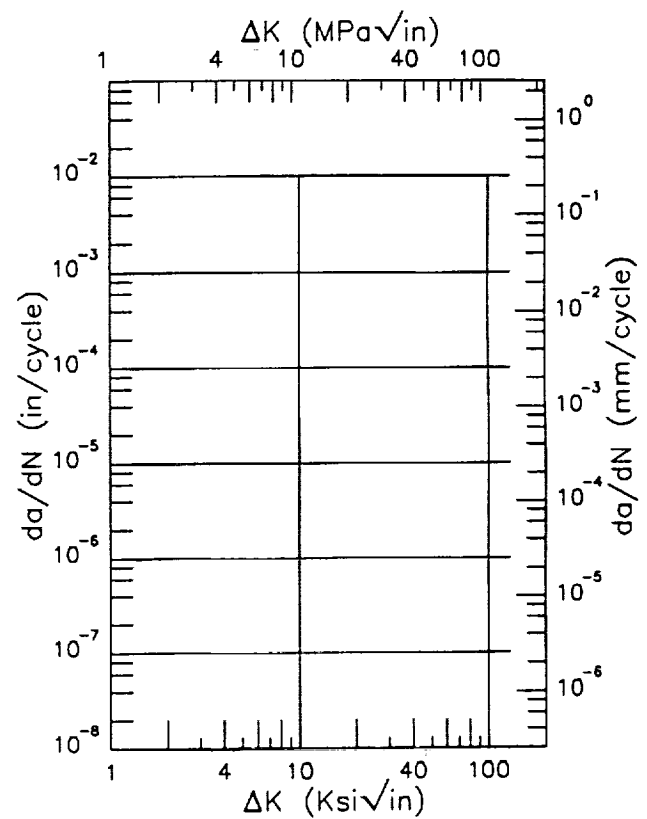
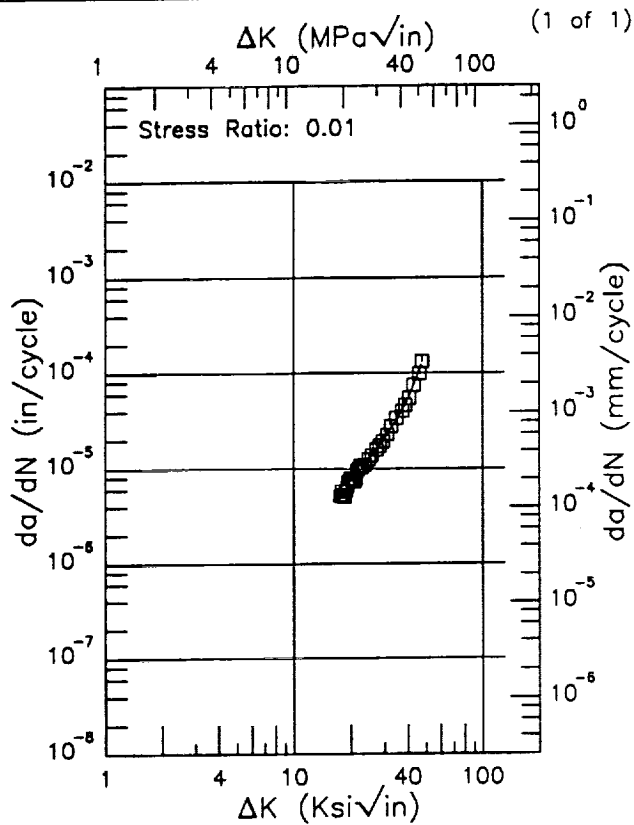
Yield Strength: 80 ksi

Ult. Strength: 125 ksi

Specimen Thk: 0.445 in.

Specimen Width: 1.8 in.

Ref: UT001



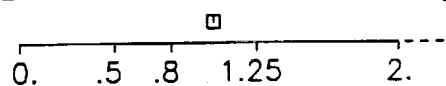
$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ (10 <sup>-6</sup> in/cycle)
17.48 (min)	4.80
20.	7.45
25.	12.8
30.	20.6
35.	33.7
40.	53.0
47.35 (max)	123.

$\Delta K$  (Ksi $\sqrt{\text{in}}$ )       $da/dN$  (10<sup>-6</sup> in/cycle)

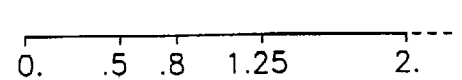
RMS %  
Error

6.34

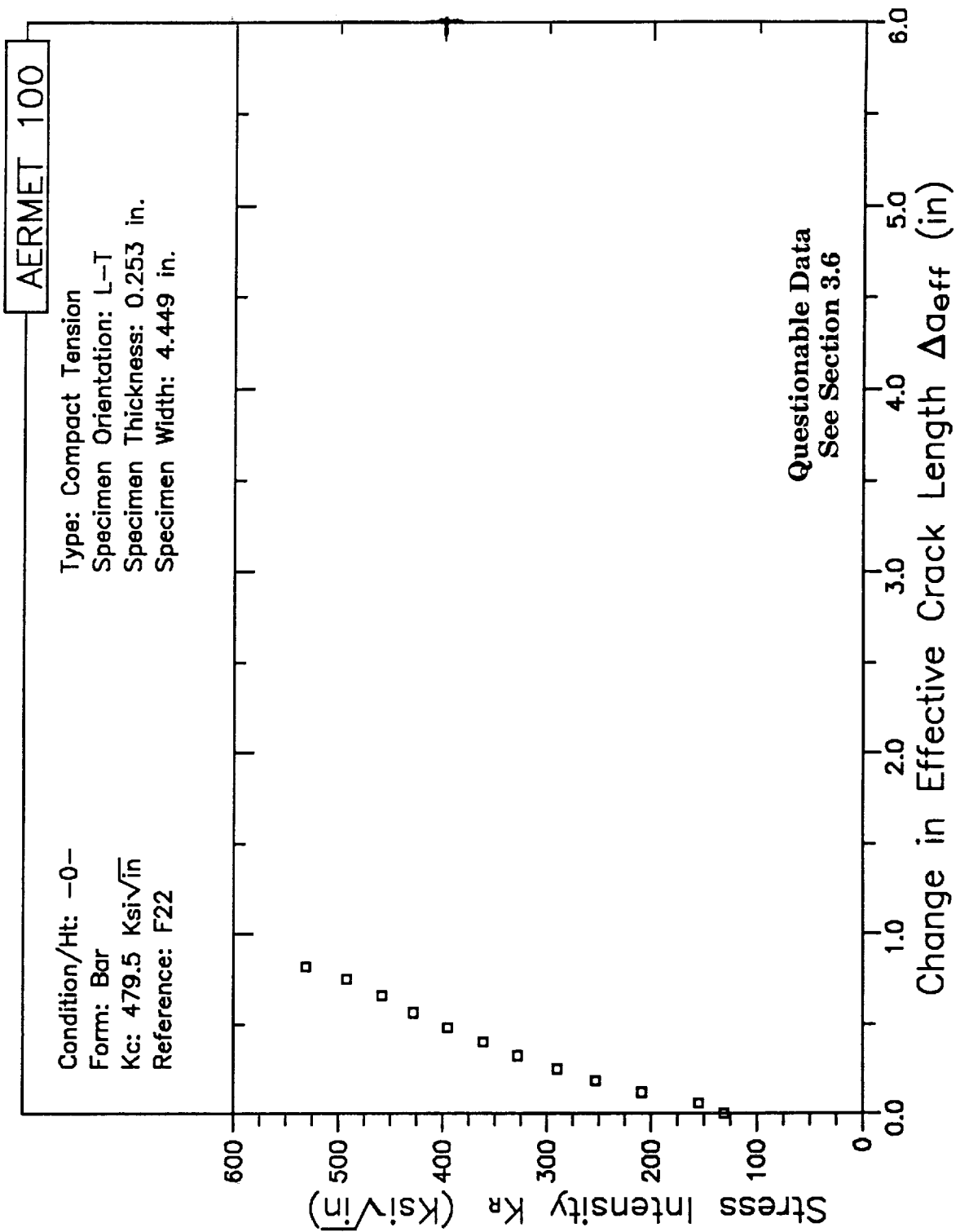
Life Prediction Ratio Summary

RMS %  
Error

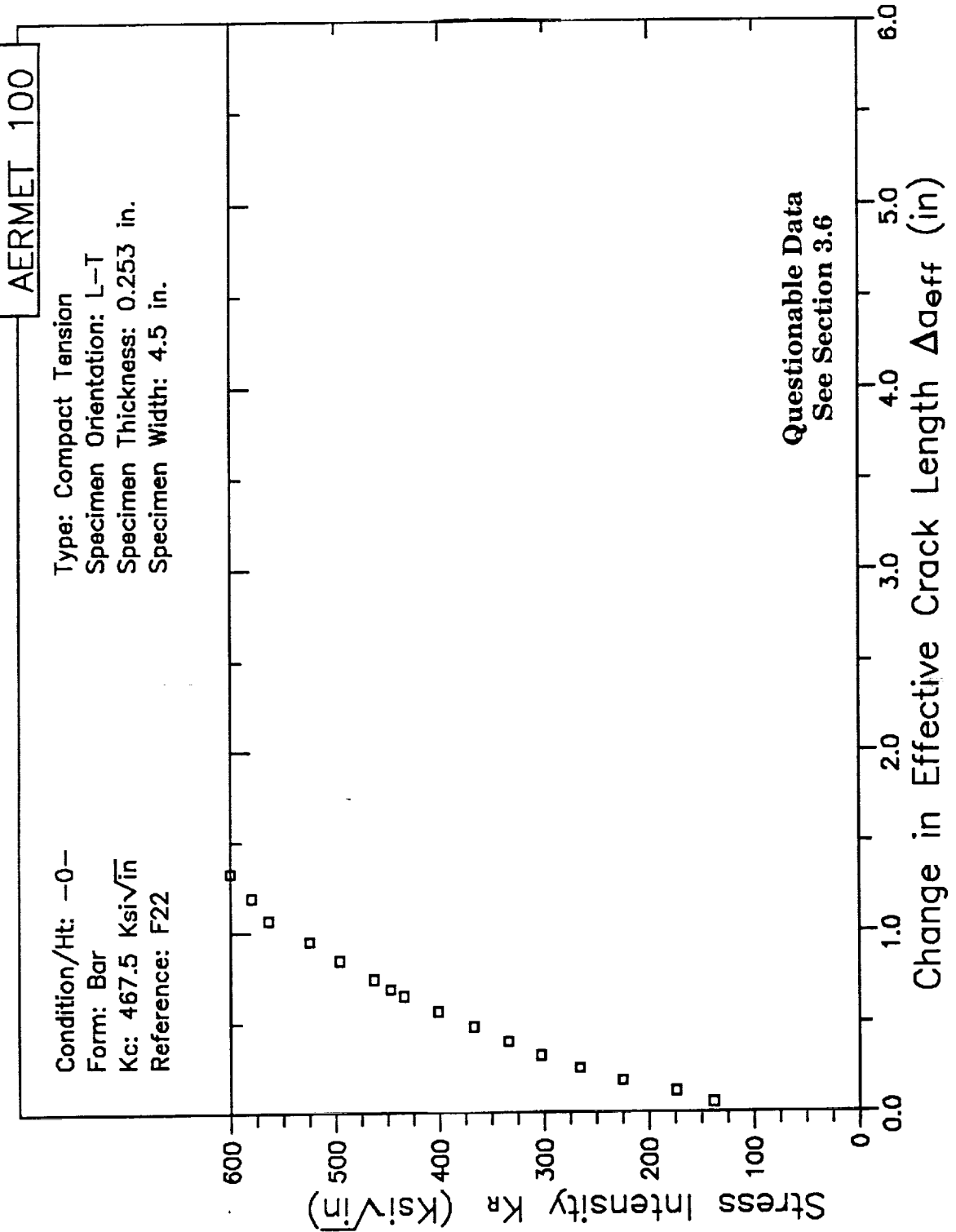
Life Prediction Ratio Summary



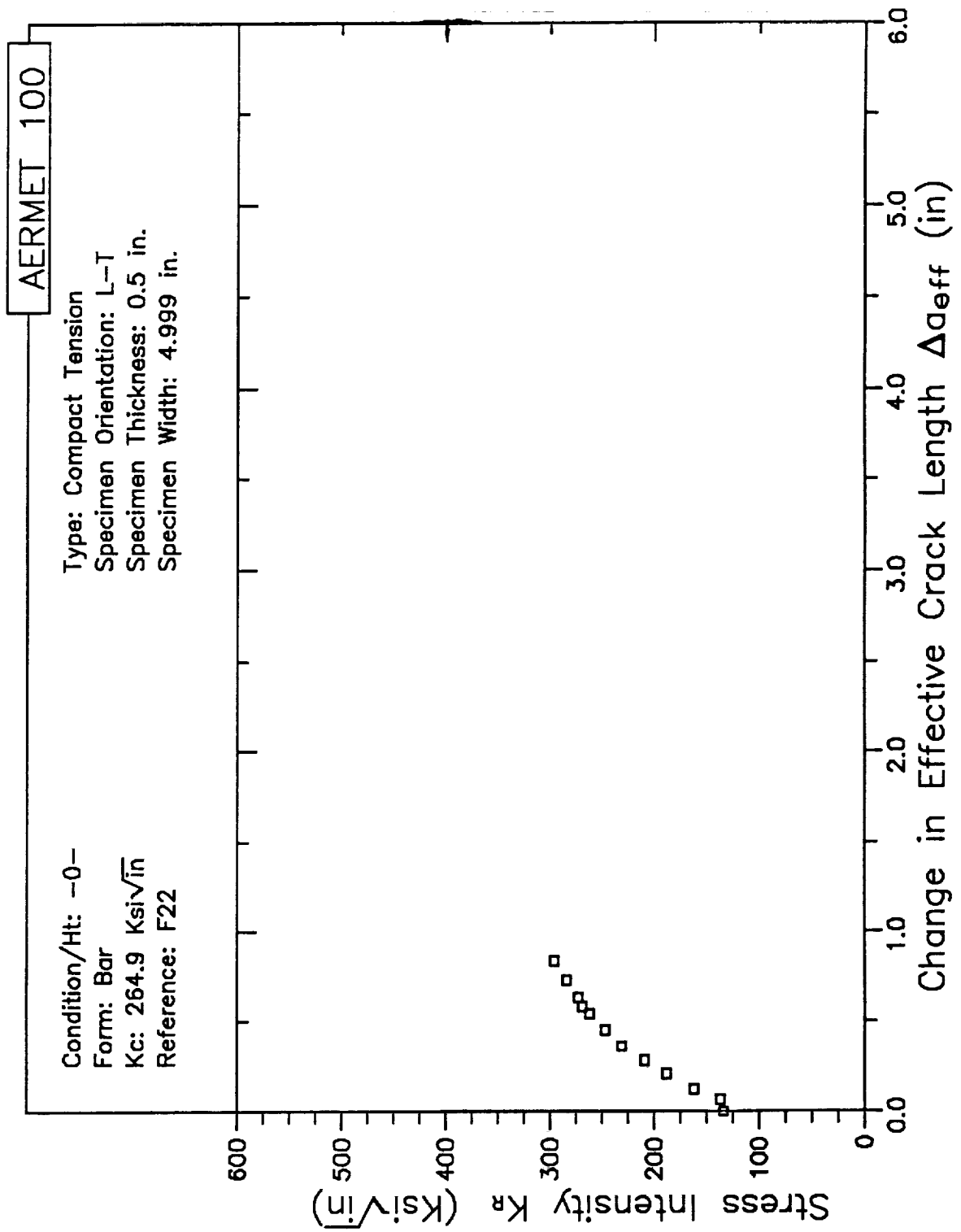
# RESISTANCE CURVE



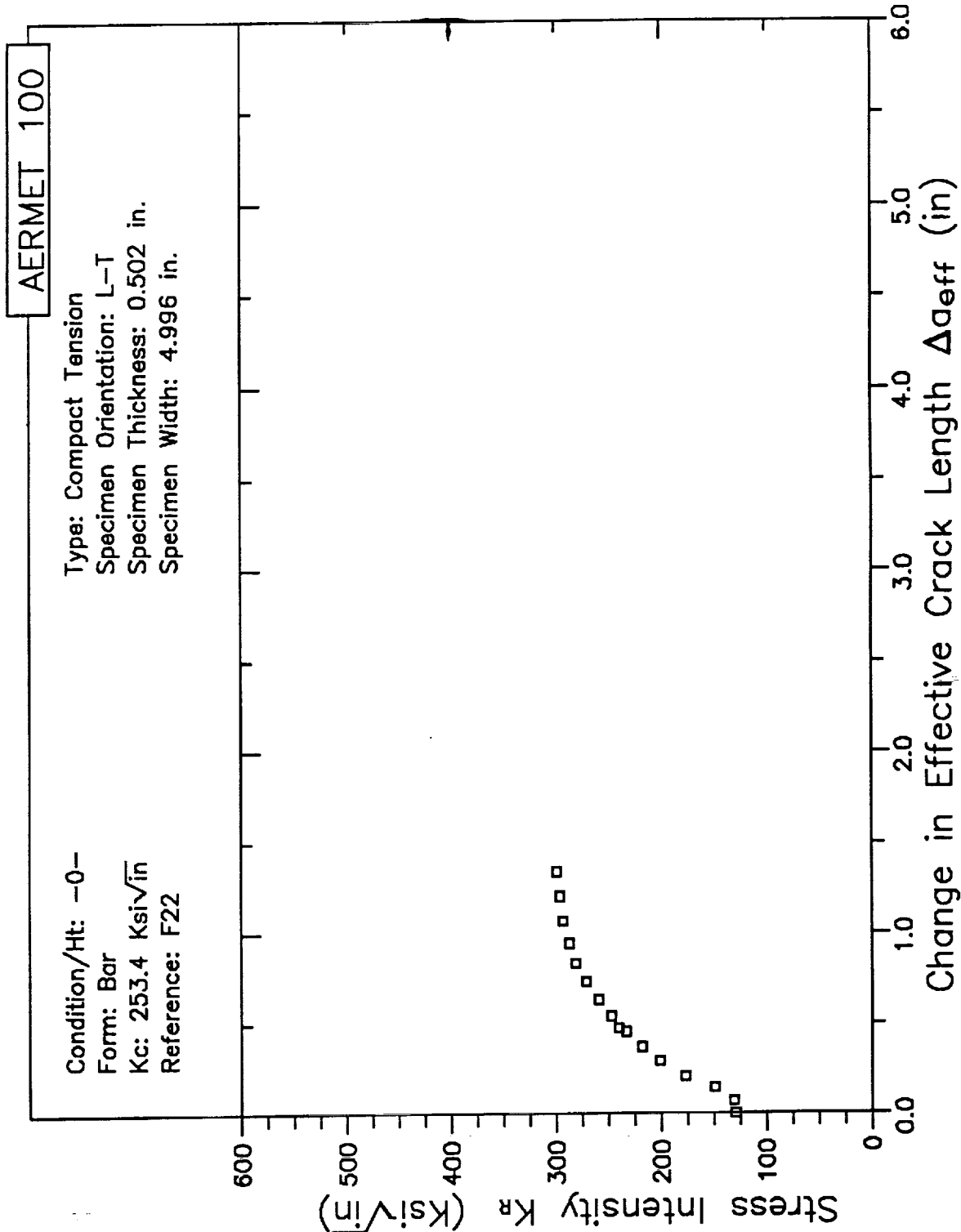
# RESISTANCE CURVE



# RESISTANCE CURVE

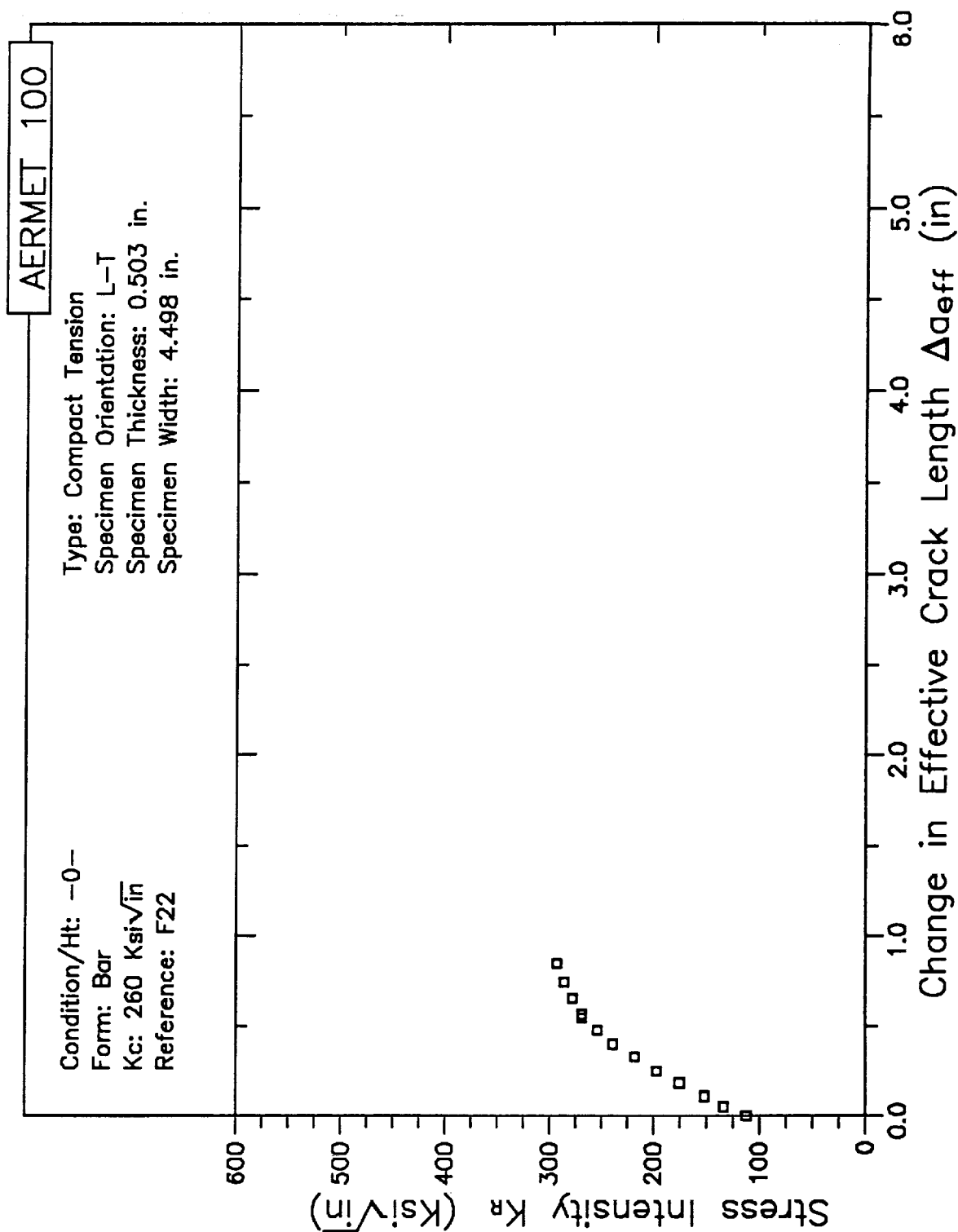


# RESISTANCE CURVE

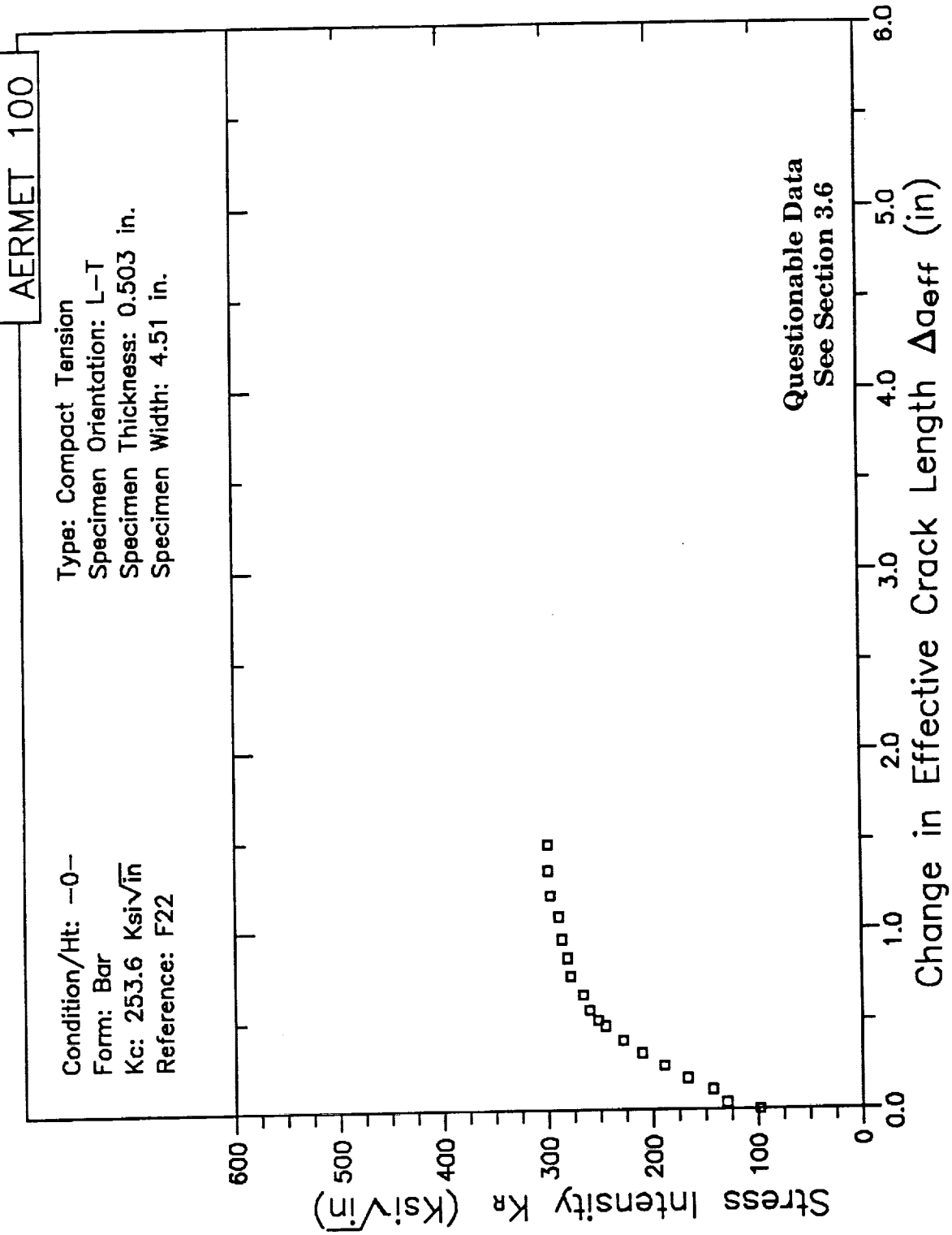




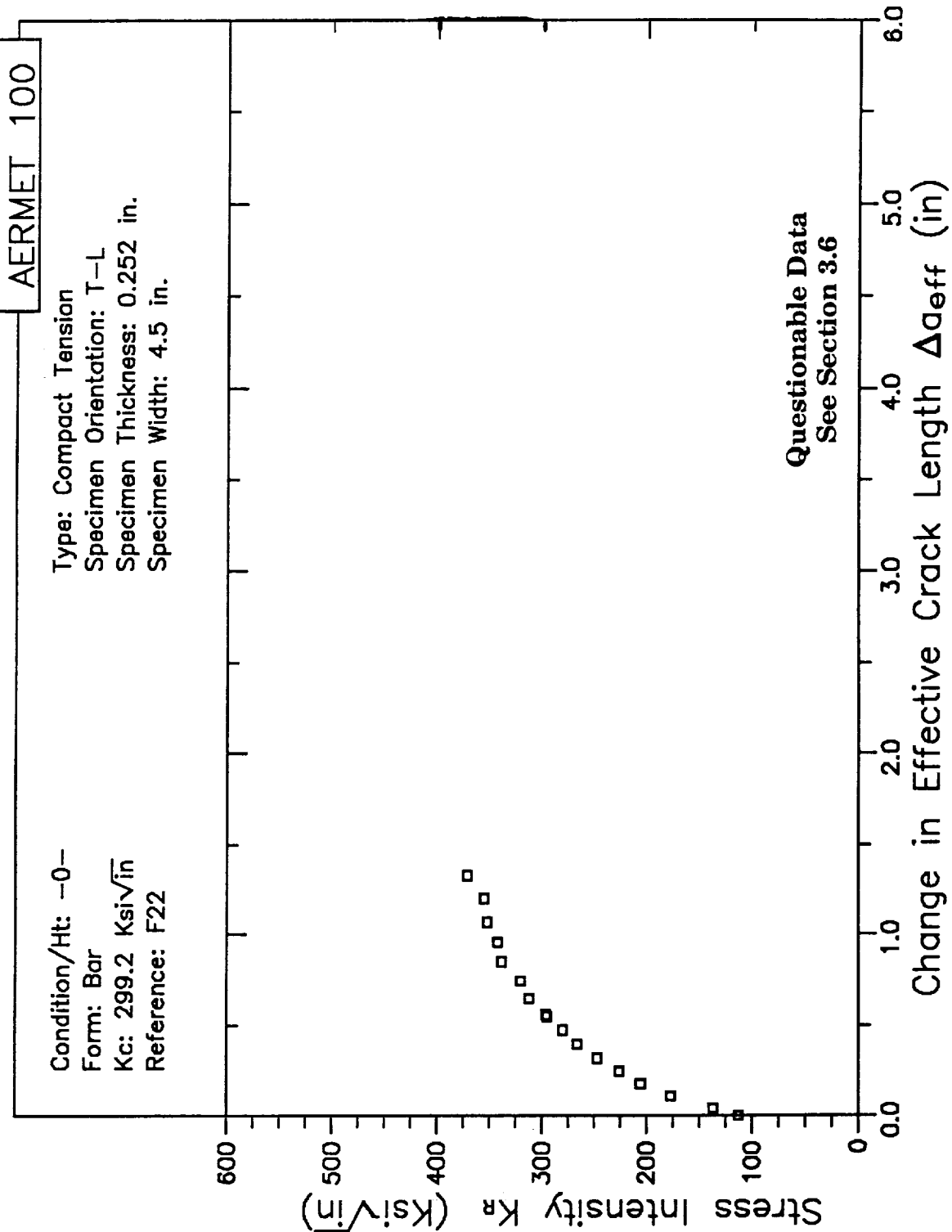
# RESISTANCE CURVE



# RESISTANCE CURVE



# RESISTANCE CURVE

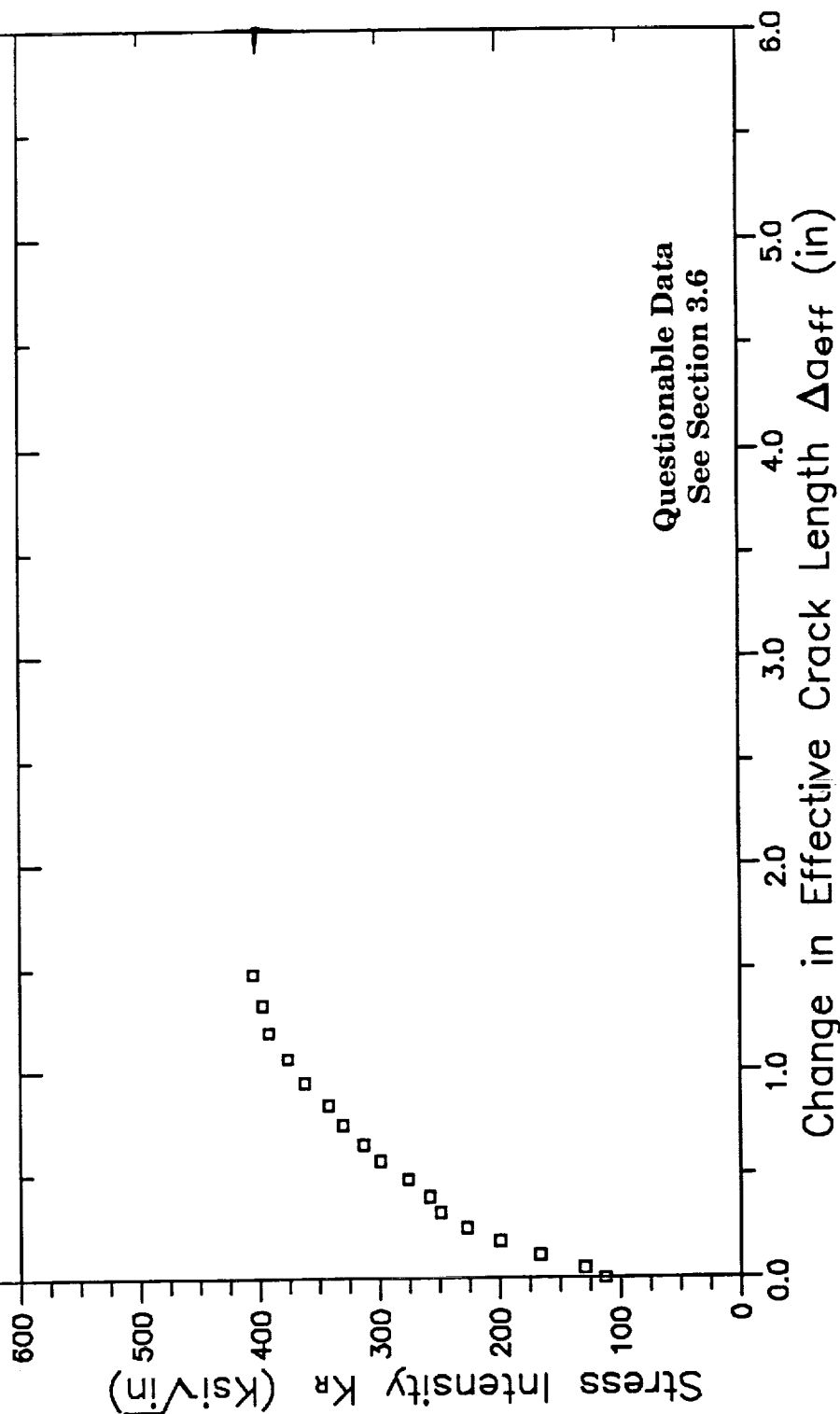


# RESISTANCE CURVE

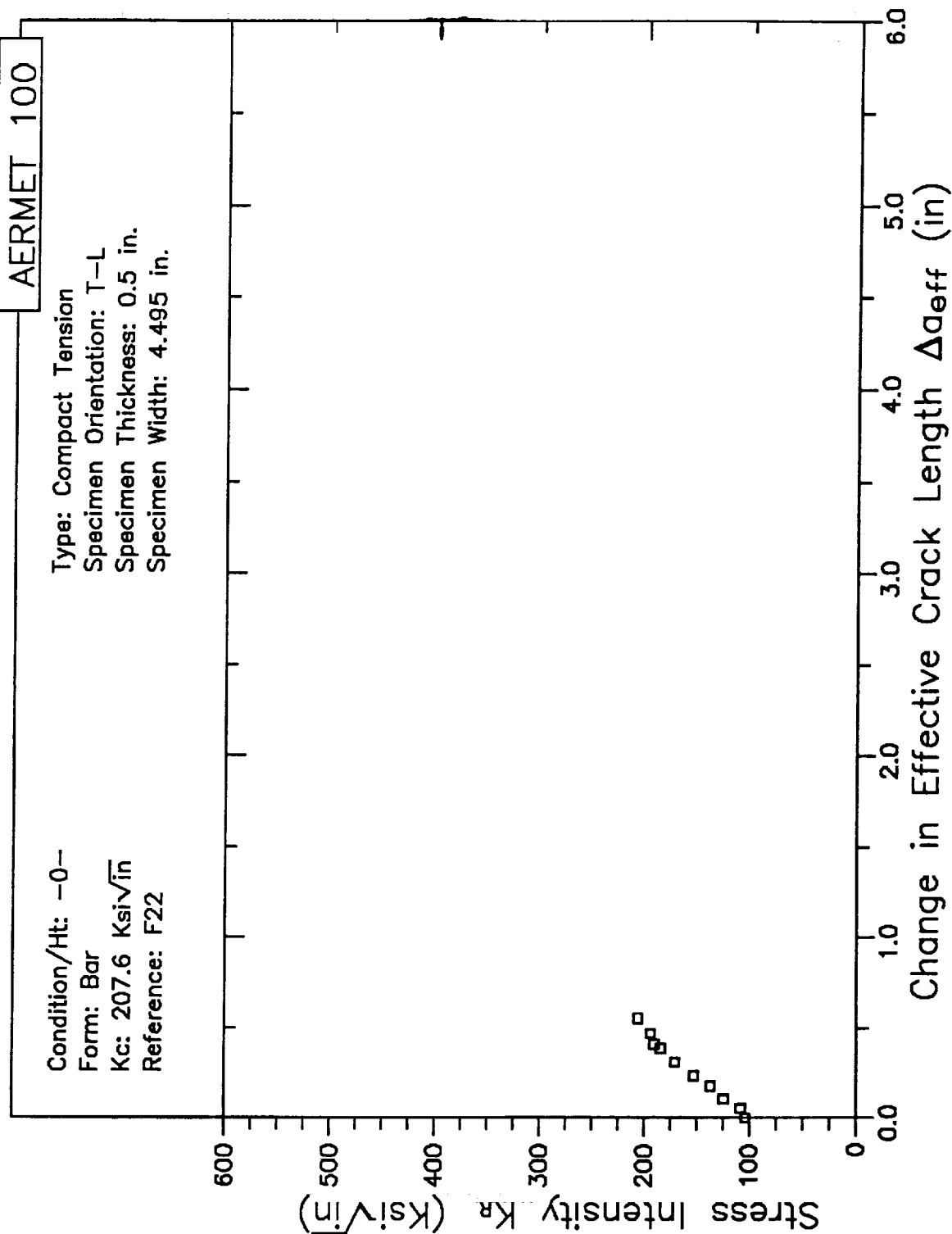
AERMET 100

Condition/Ht: -0-  
Form: Bar  
Kc: 312.7 Ksi√in  
Reference: F22

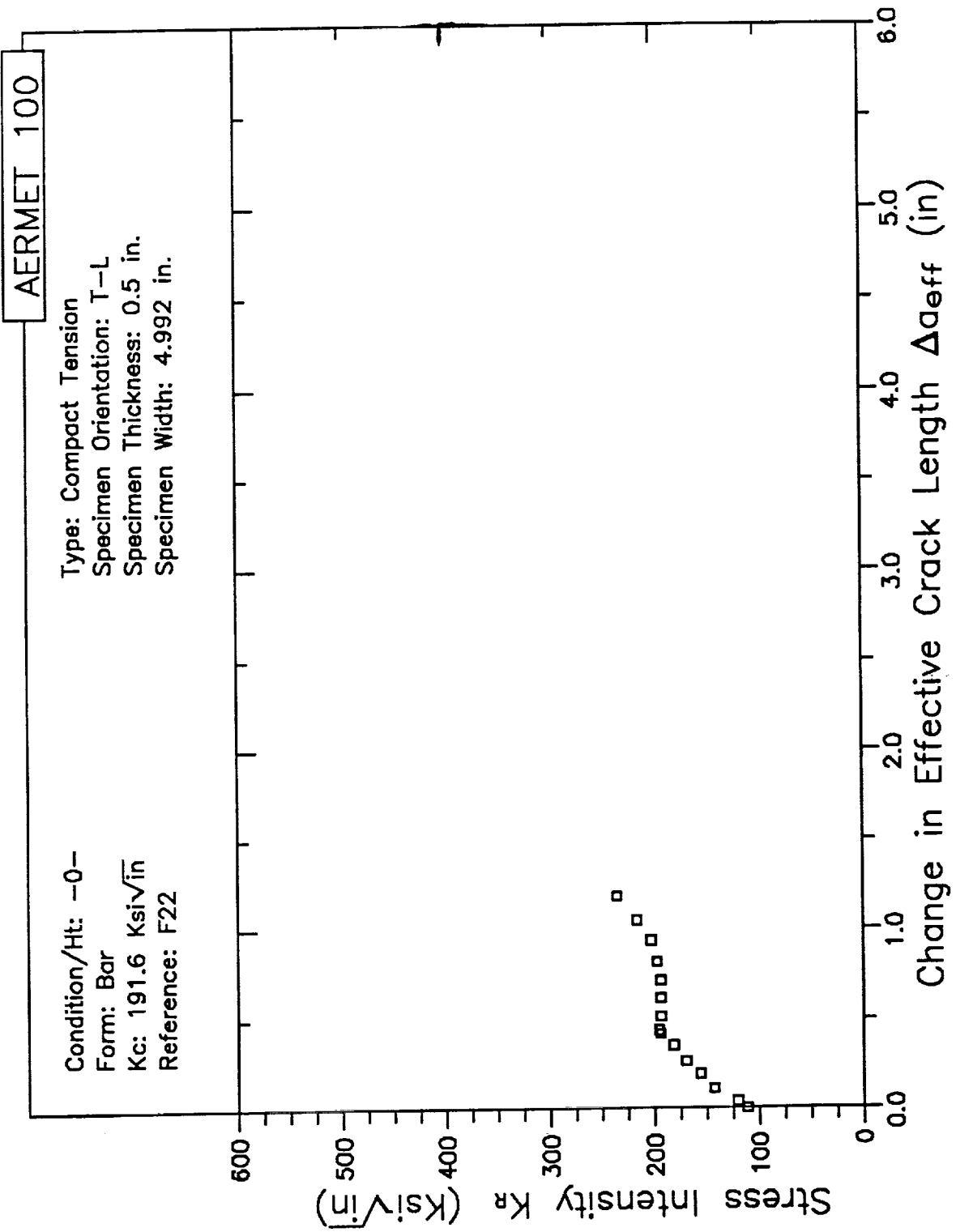
Type: Compact Tension  
Specimen Orientation: T-L  
Specimen Thickness: 0.252 in.  
Specimen Width: 4.501 in.



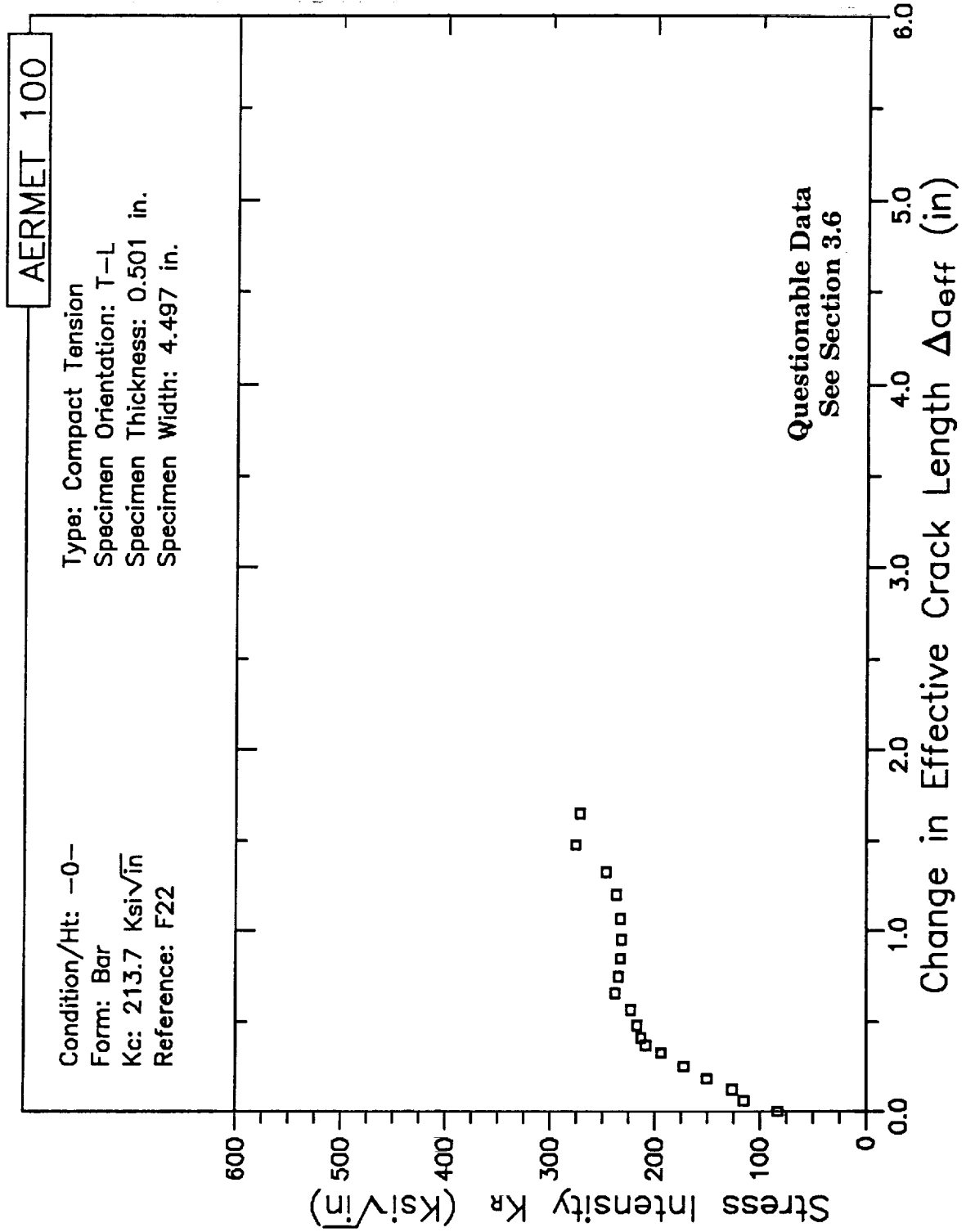
# RESISTANCE CURVE



# RESISTANCE CURVE



# RESISTANCE CURVE

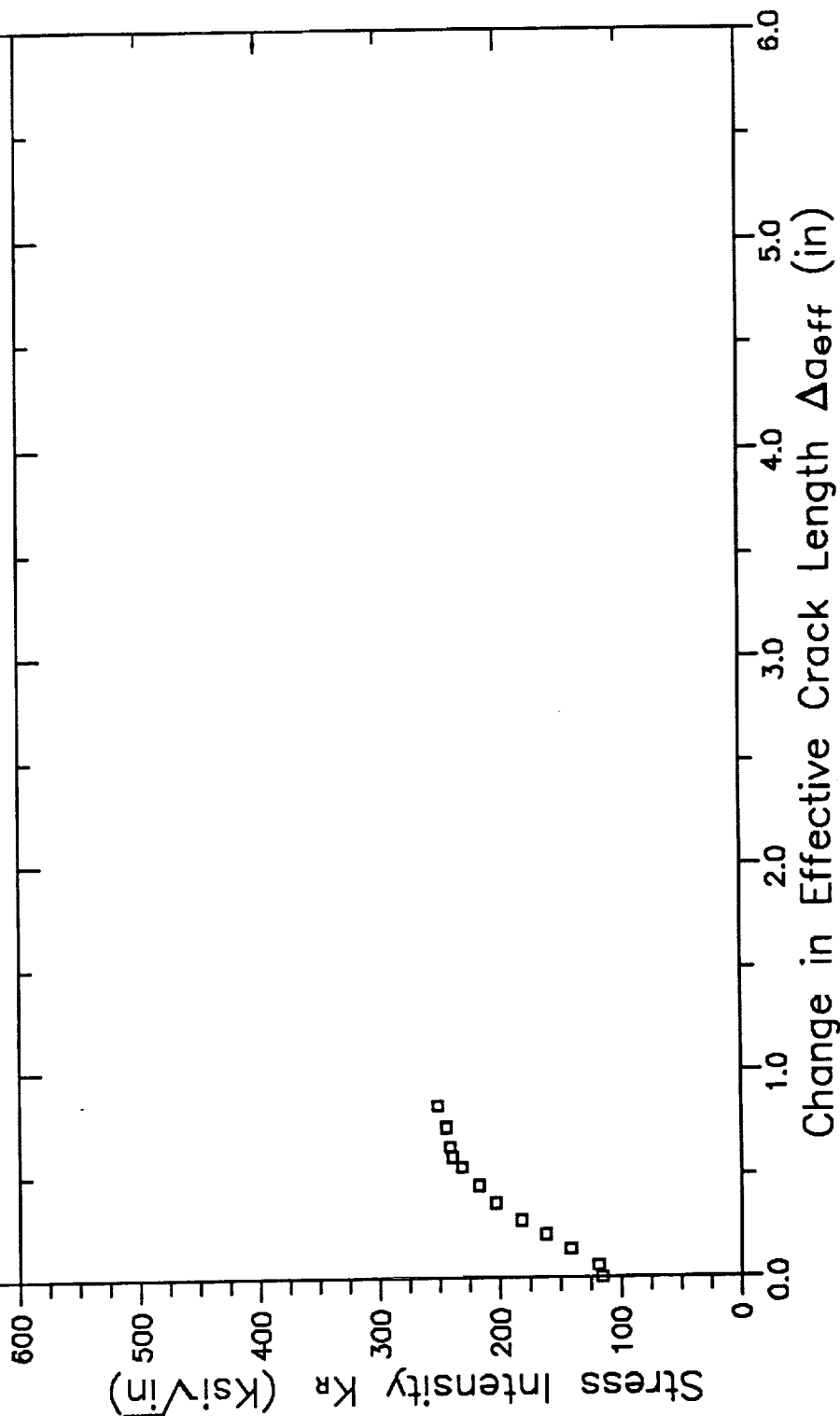


# RESISTANCE CURVE

AERMET 100

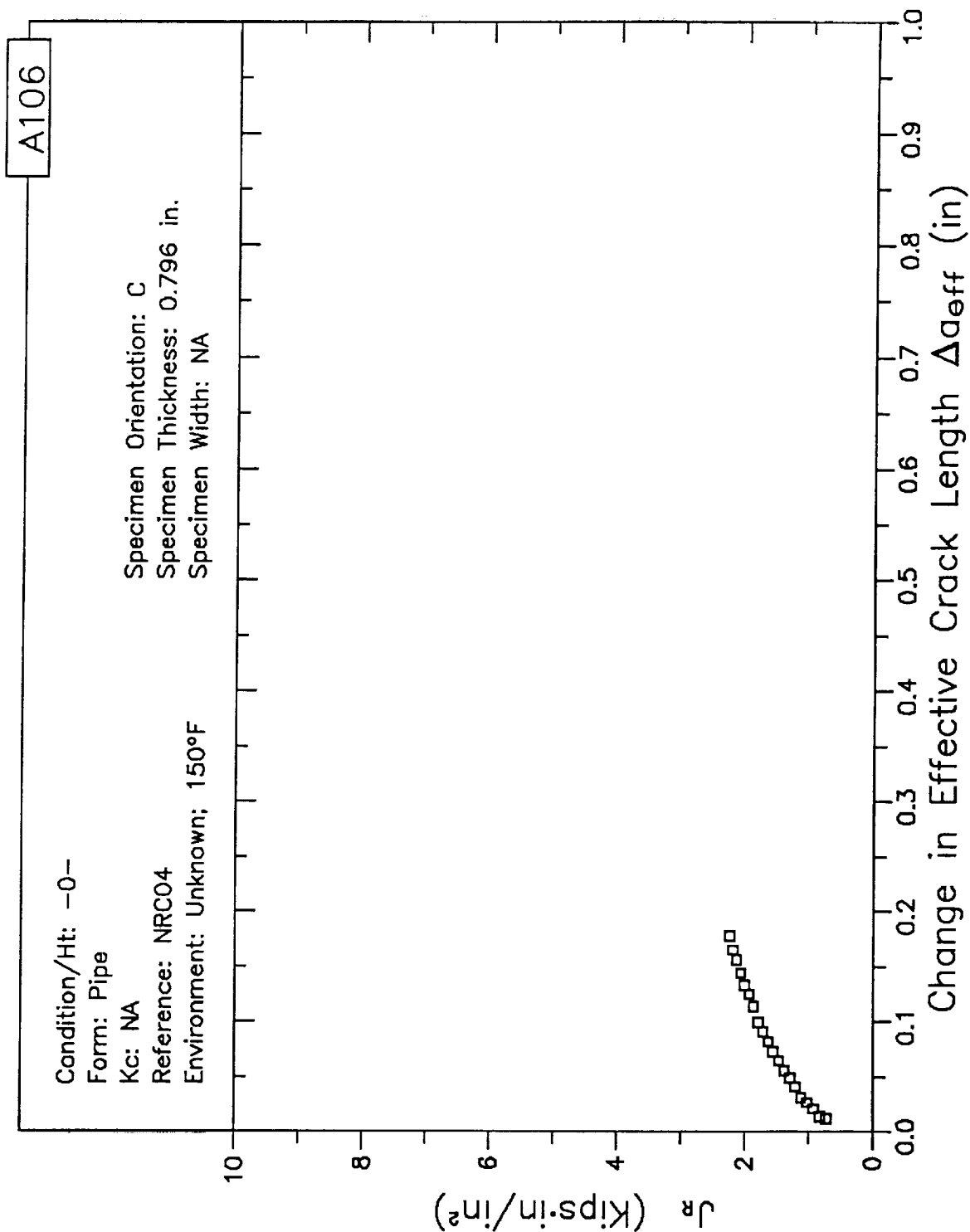
Condition/Ht: -0-  
Form: Bar  
Kc: 227.7 Ksi√in  
Reference: F22

Type: Compact Tension  
Specimen Orientation: T-L  
Specimen Thickness: 0.501 in.  
Specimen Width: 5 in.

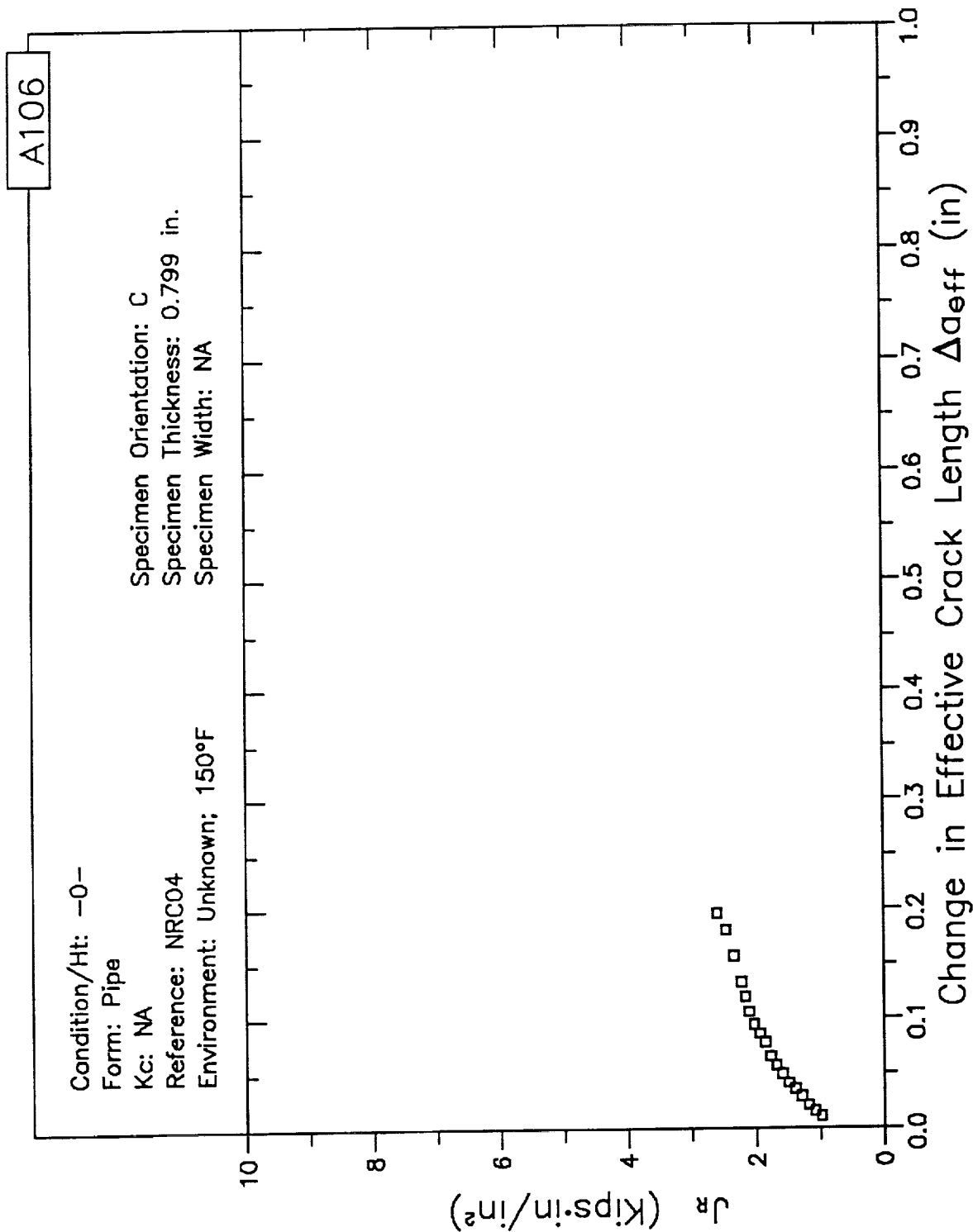




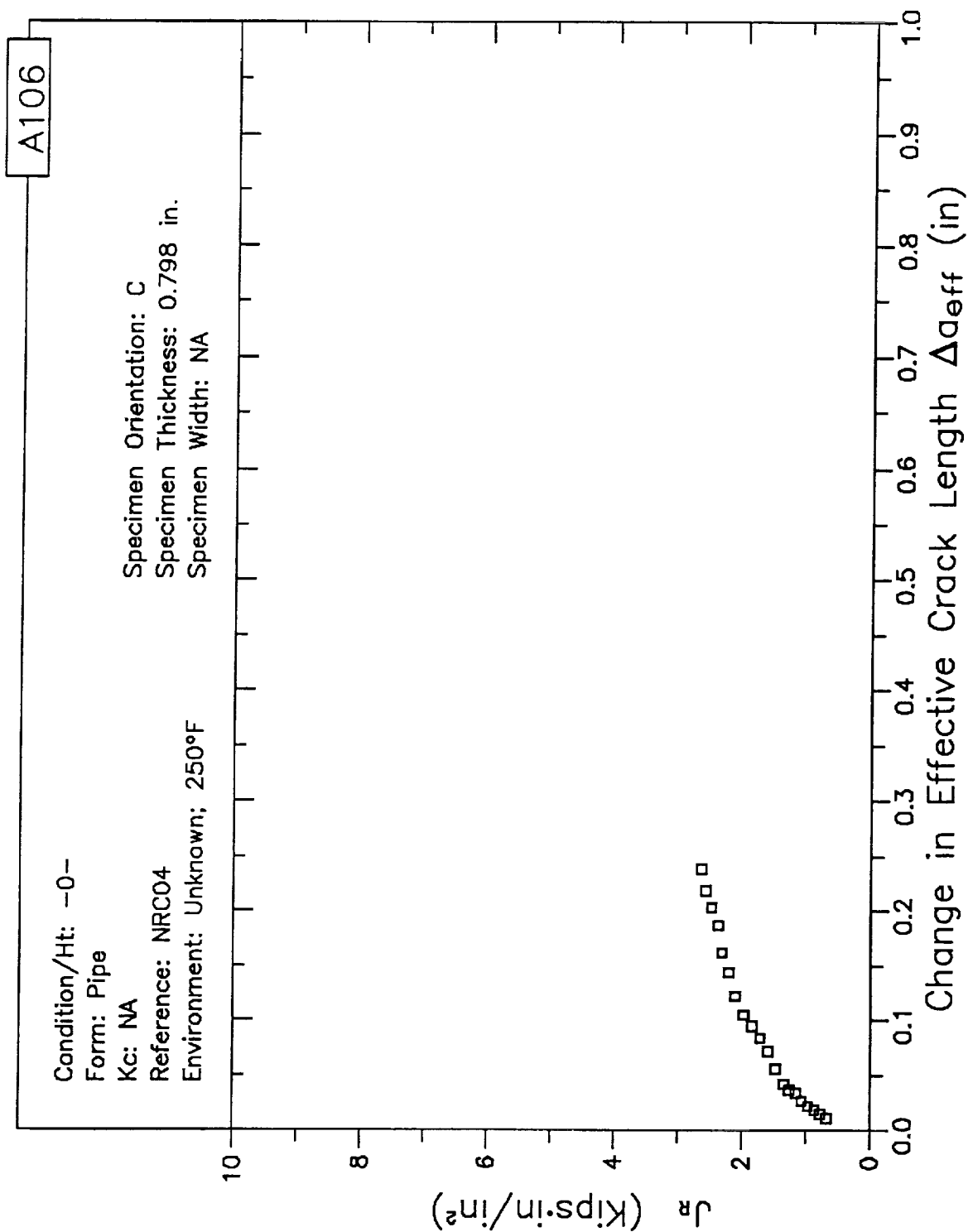
# RESISTANCE CURVE



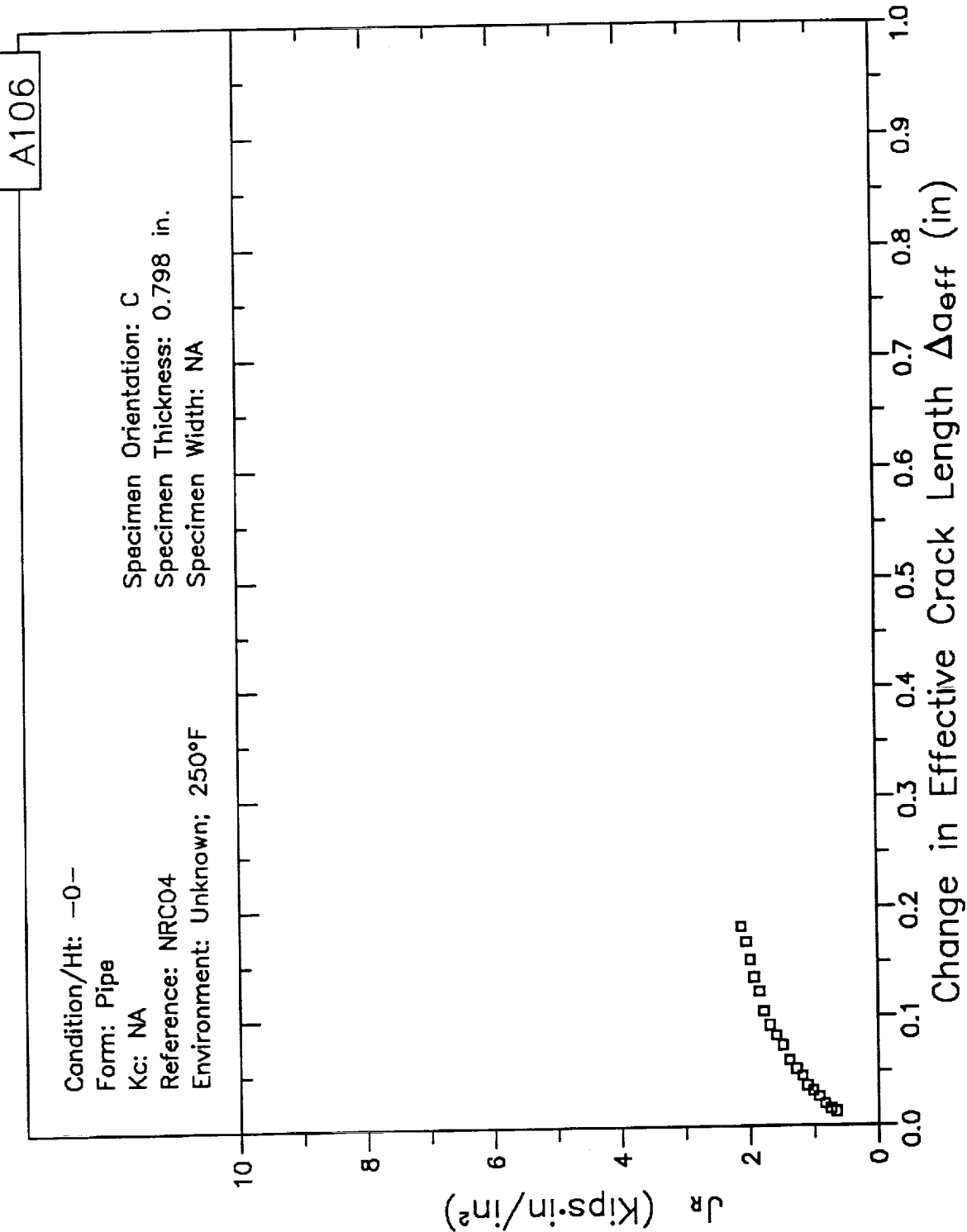
# RESISTANCE CURVE



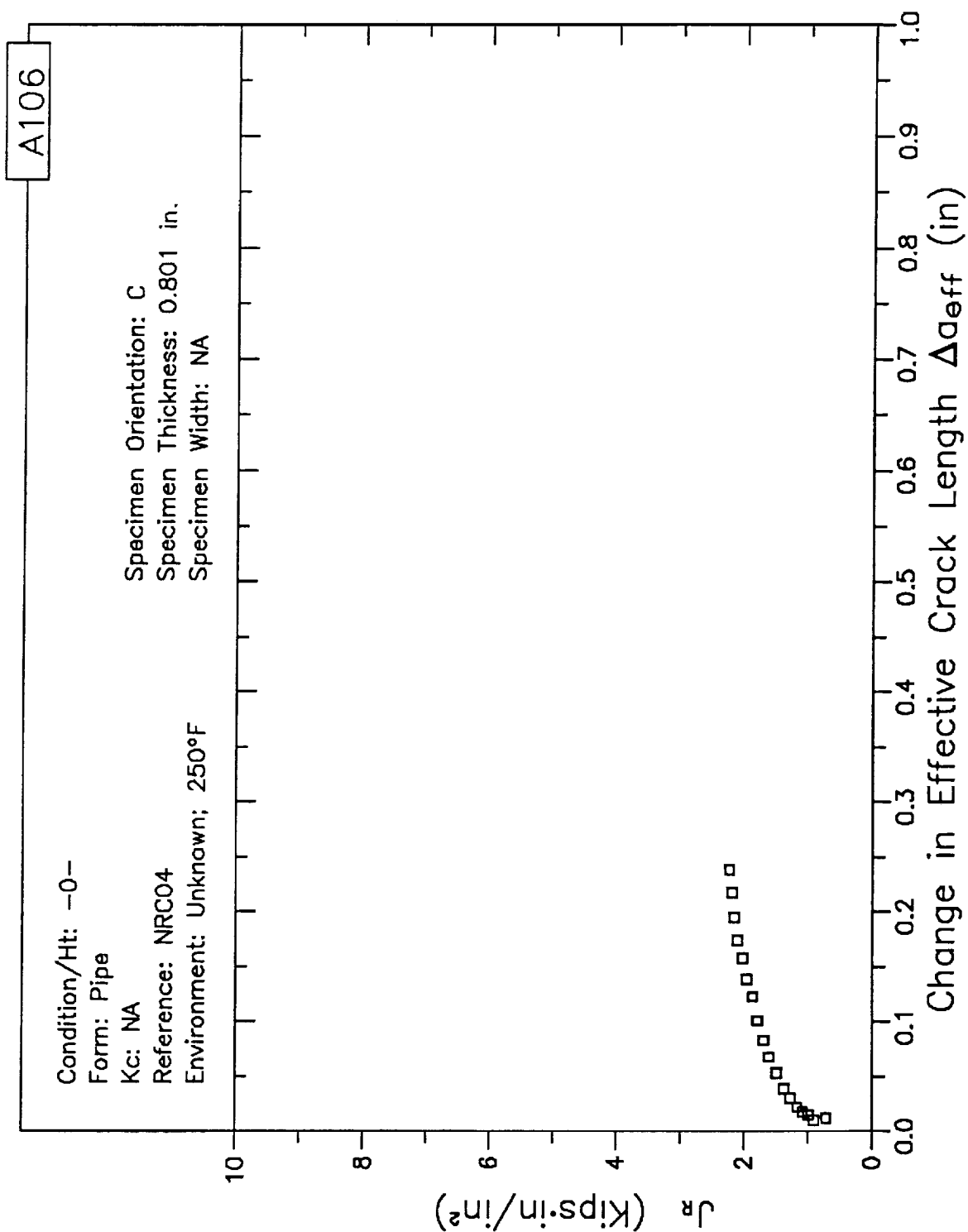
# RESISTANCE CURVE



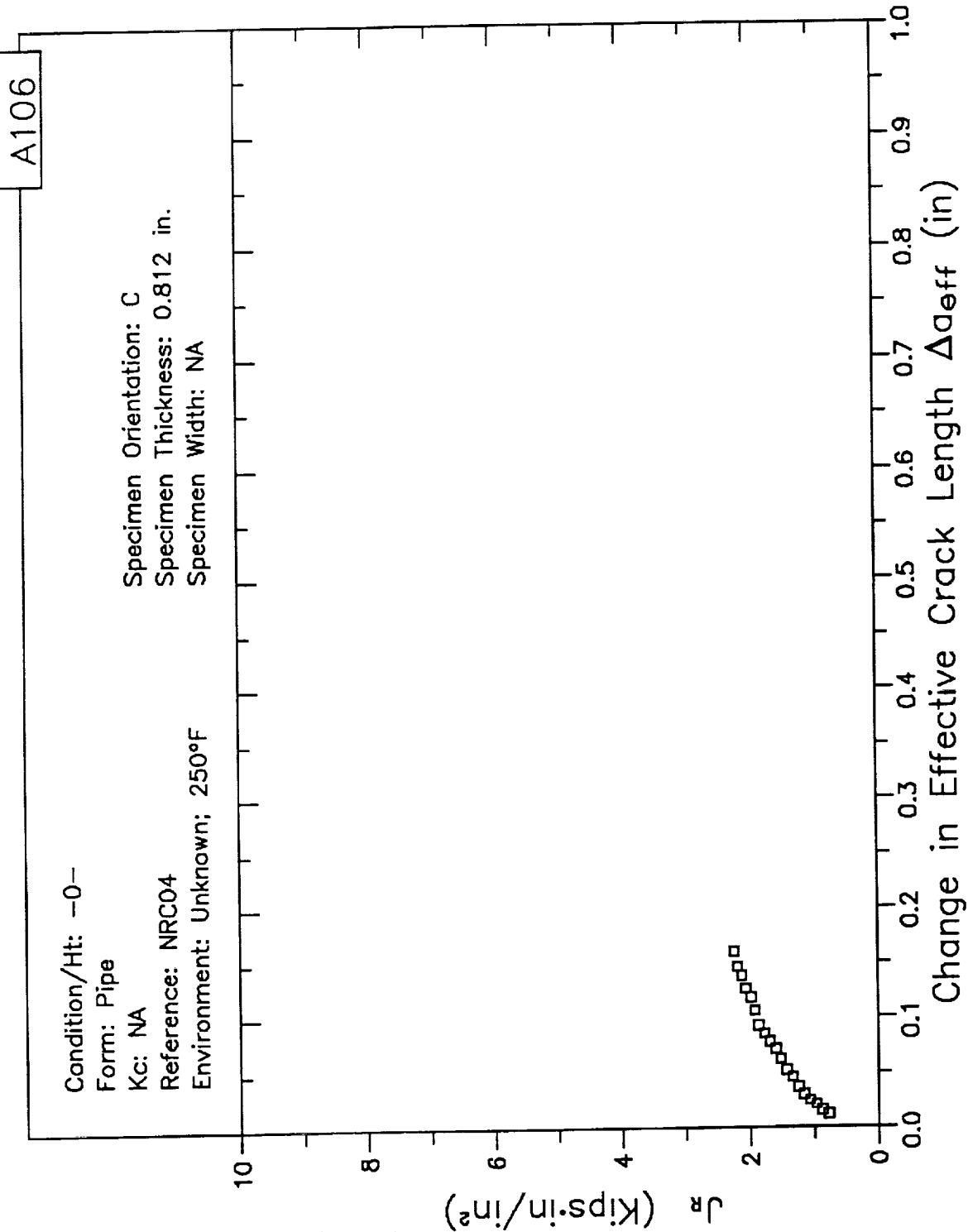
# RESISTANCE CURVE



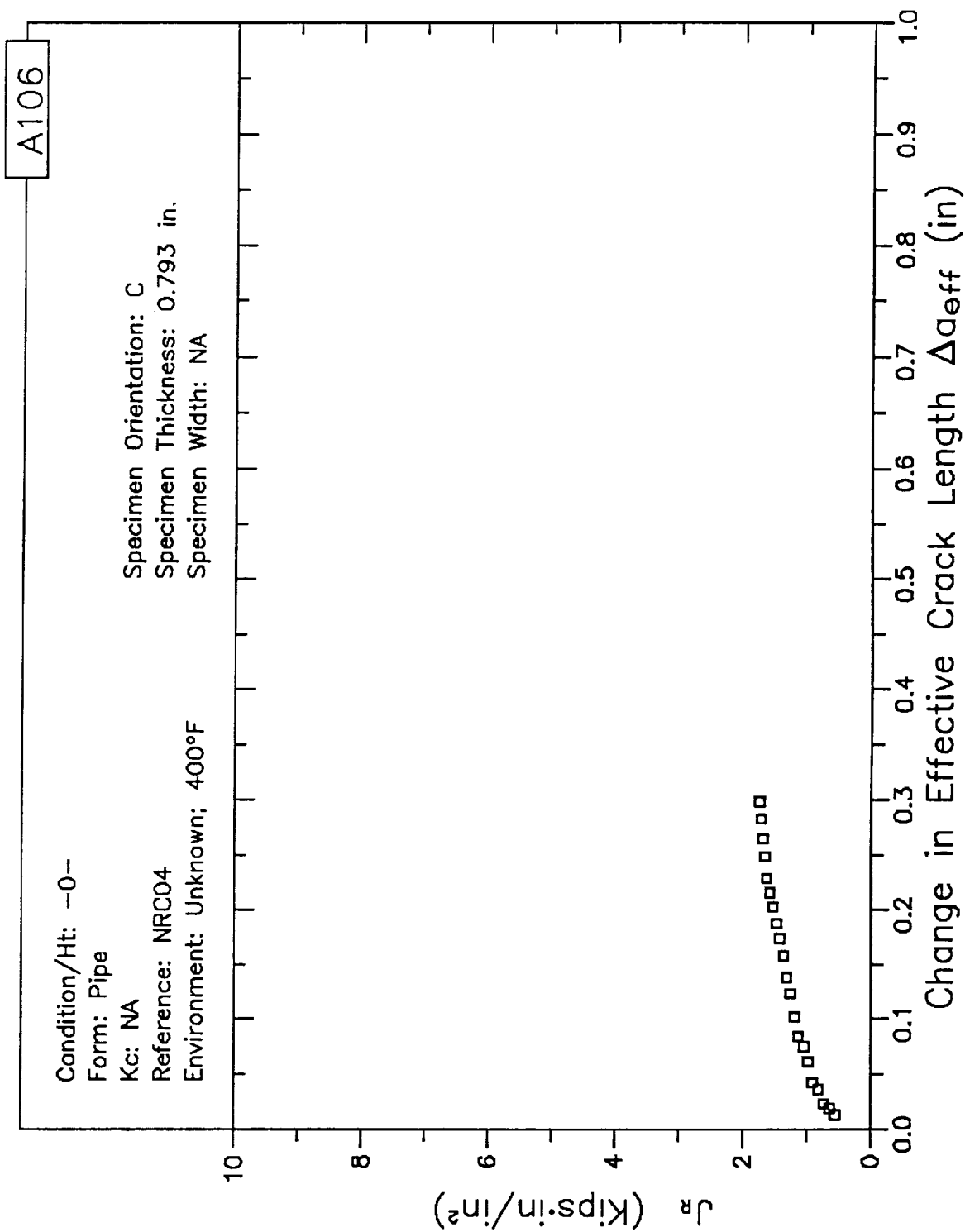
# RESISTANCE CURVE



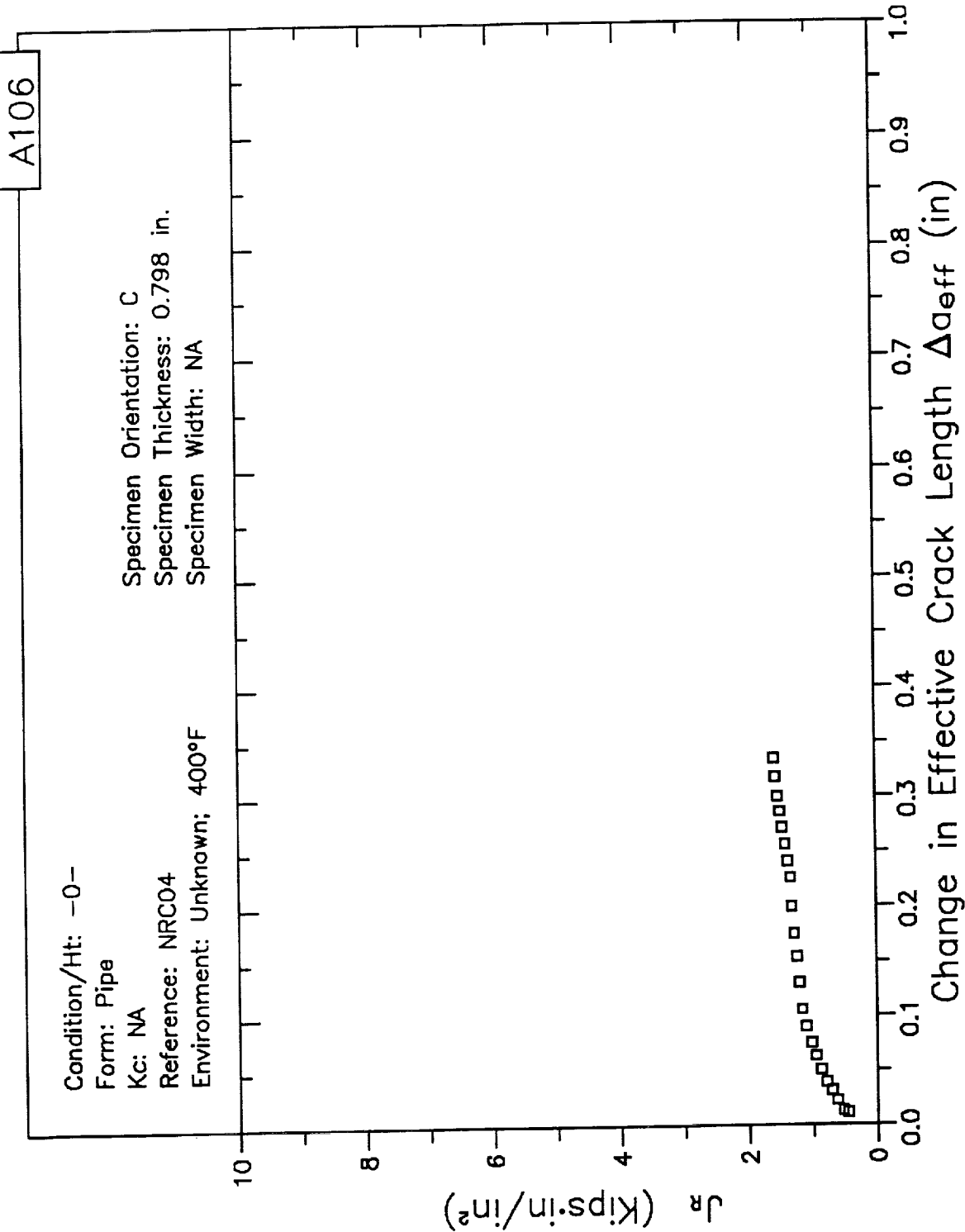
# RESISTANCE CURVE



# RESISTANCE CURVE

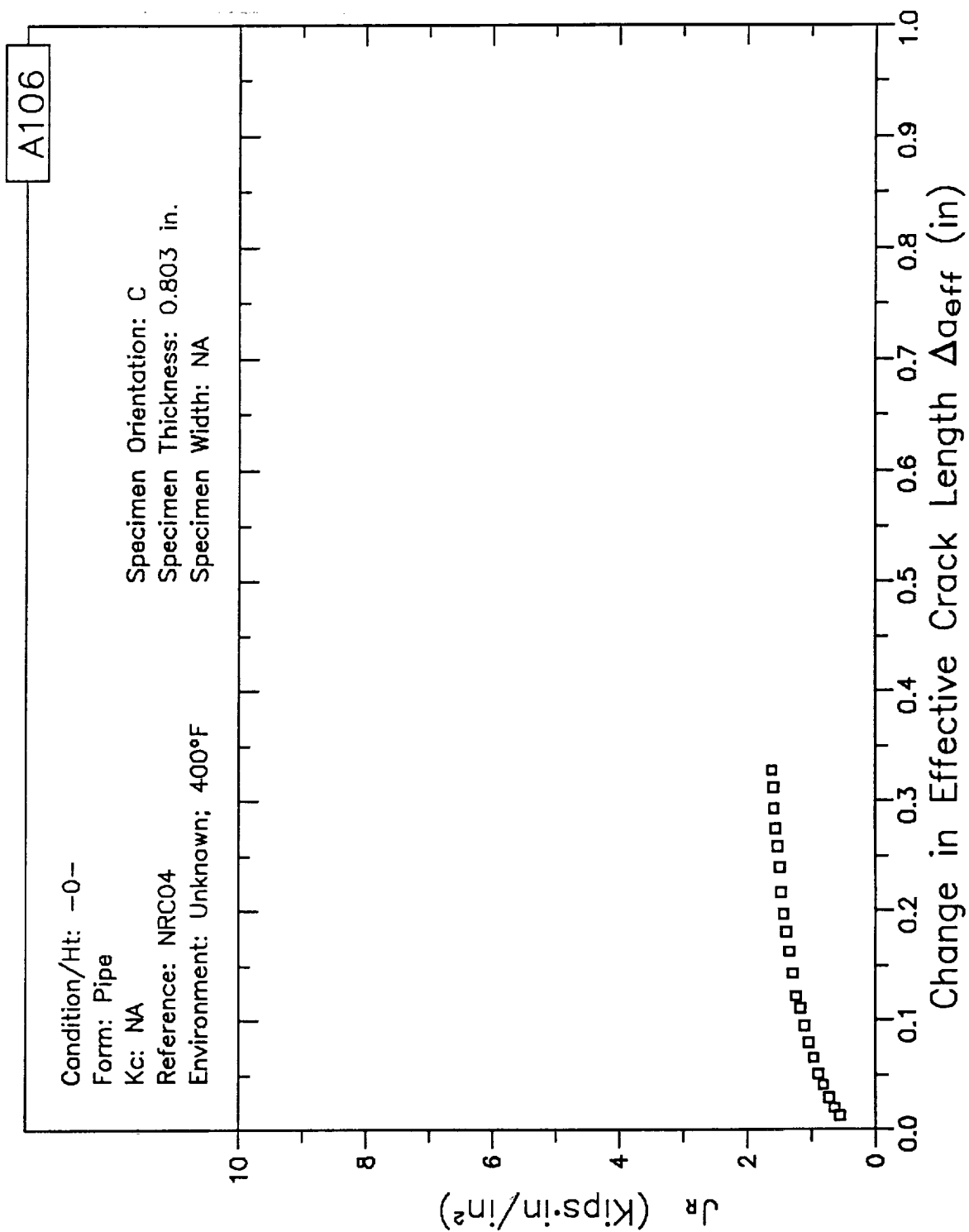


# RESISTANCE CURVE

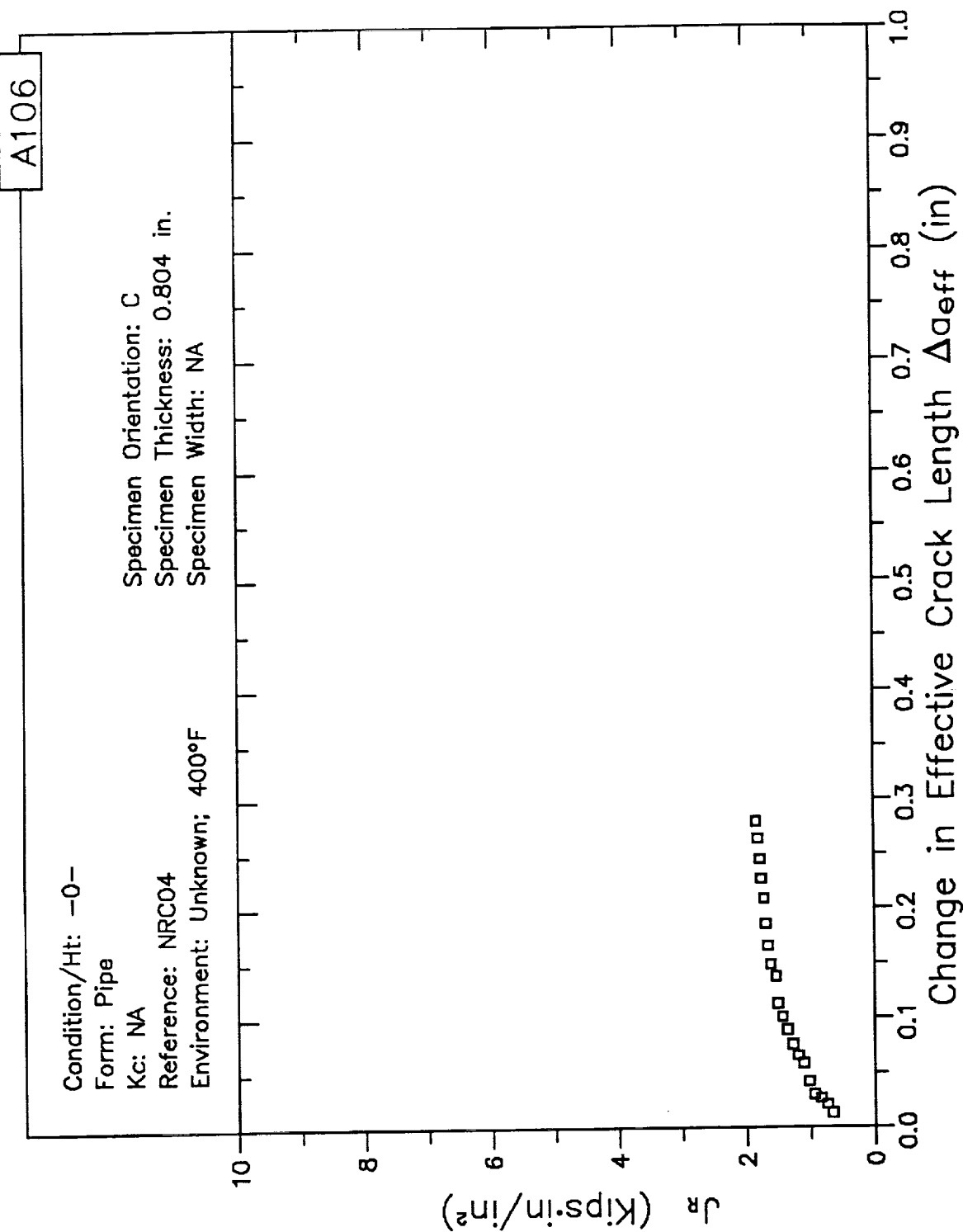




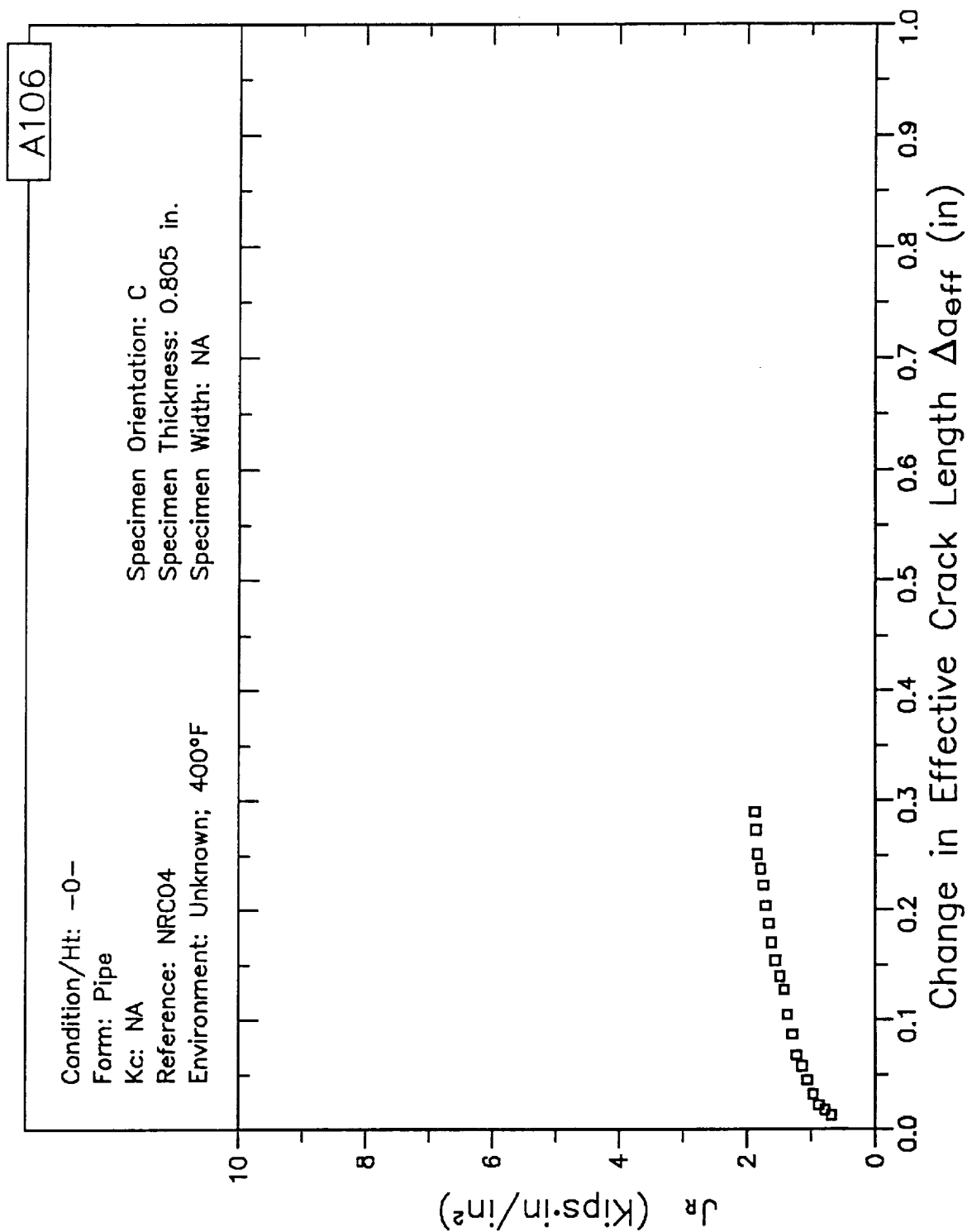
# RESISTANCE CURVE



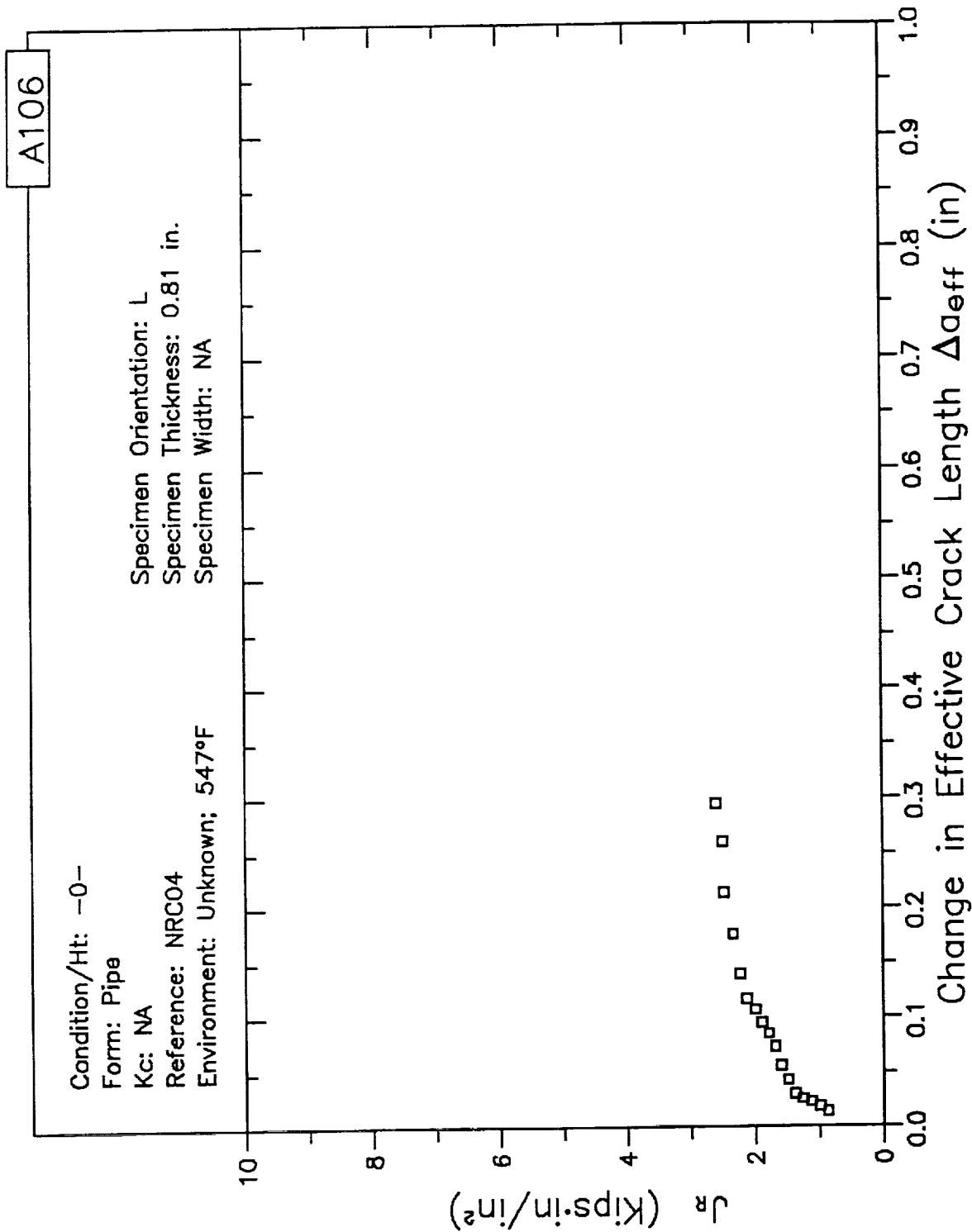
# RESISTANCE CURVE



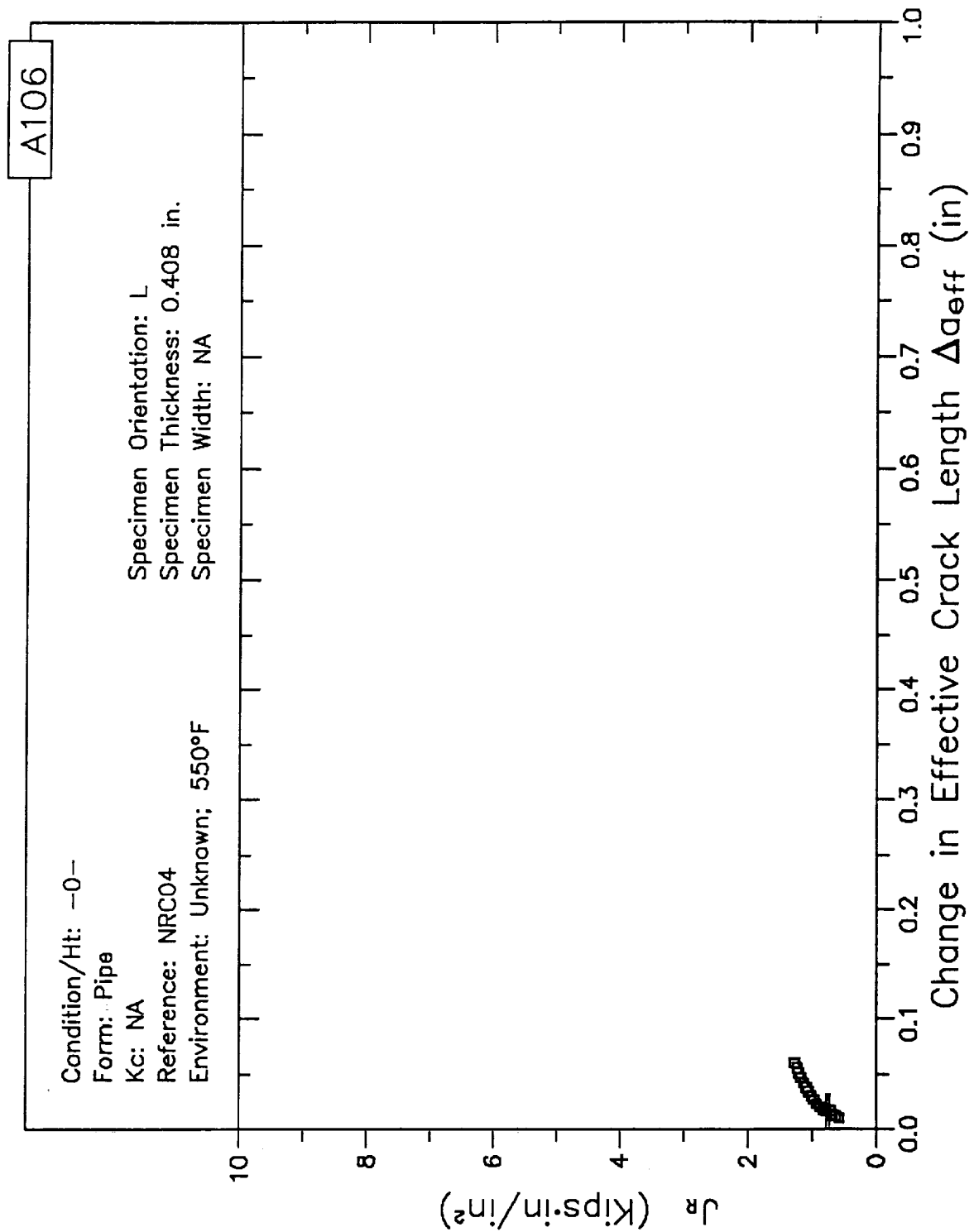
# RESISTANCE CURVE



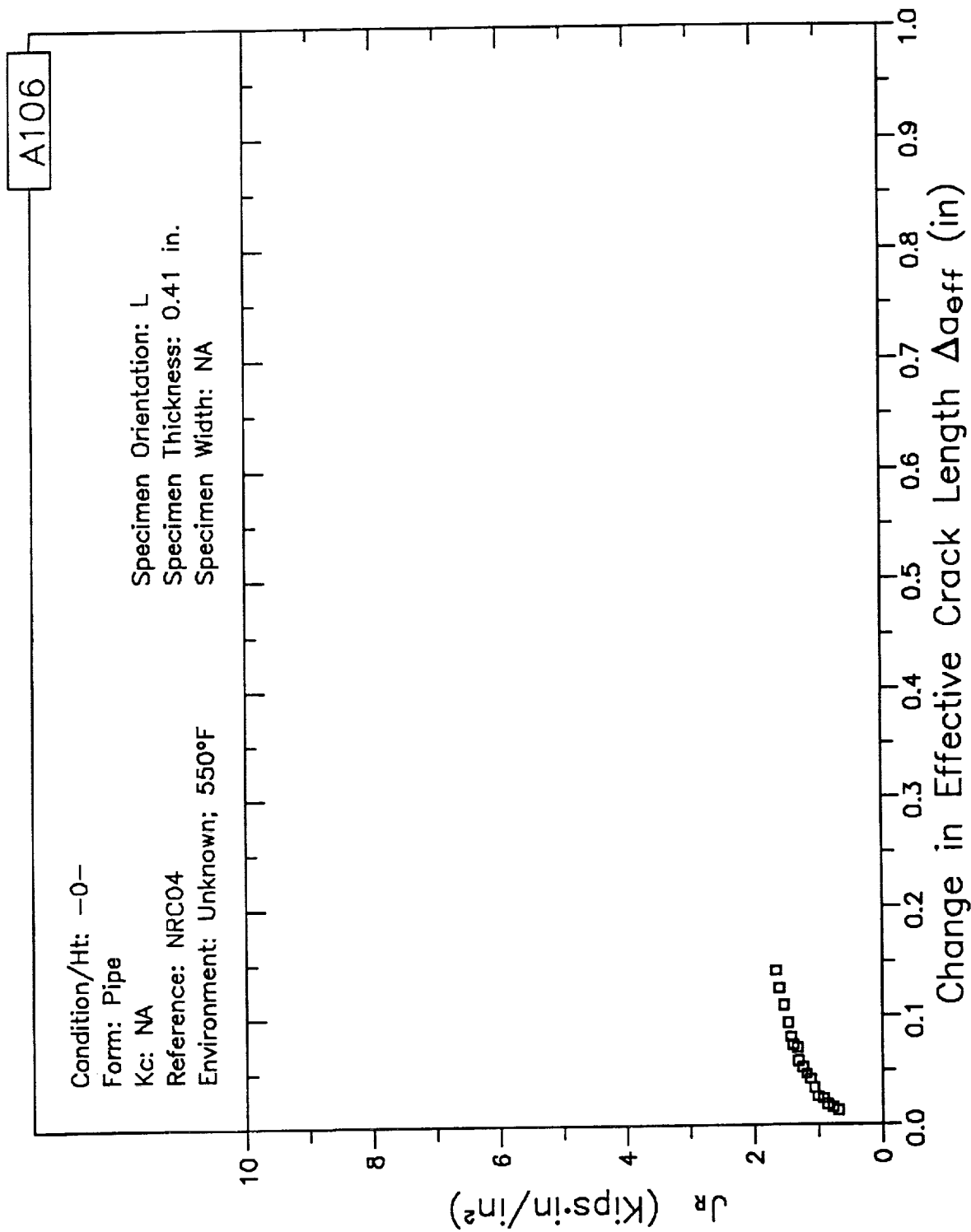
# RESISTANCE CURVE



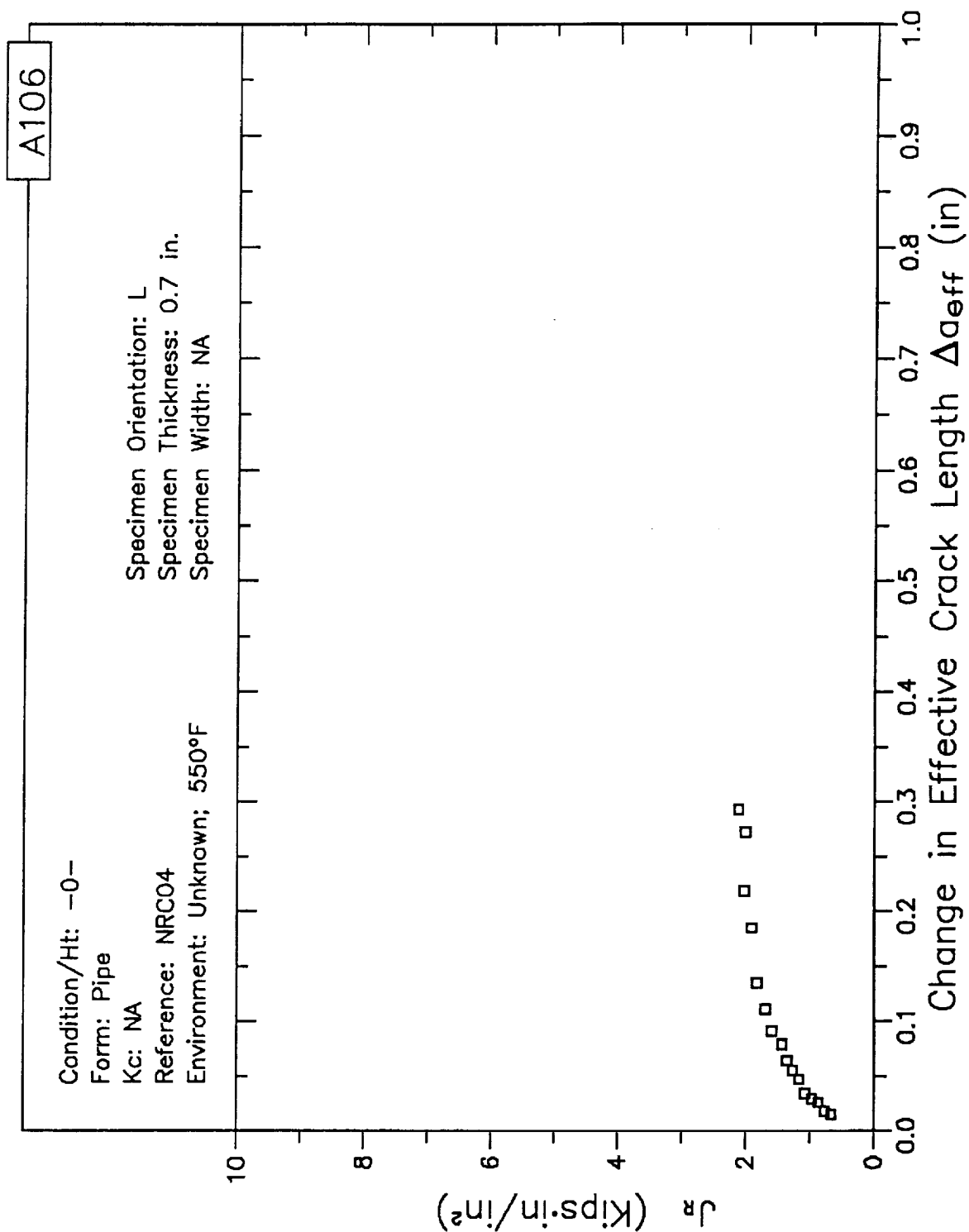
# RESISTANCE CURVE



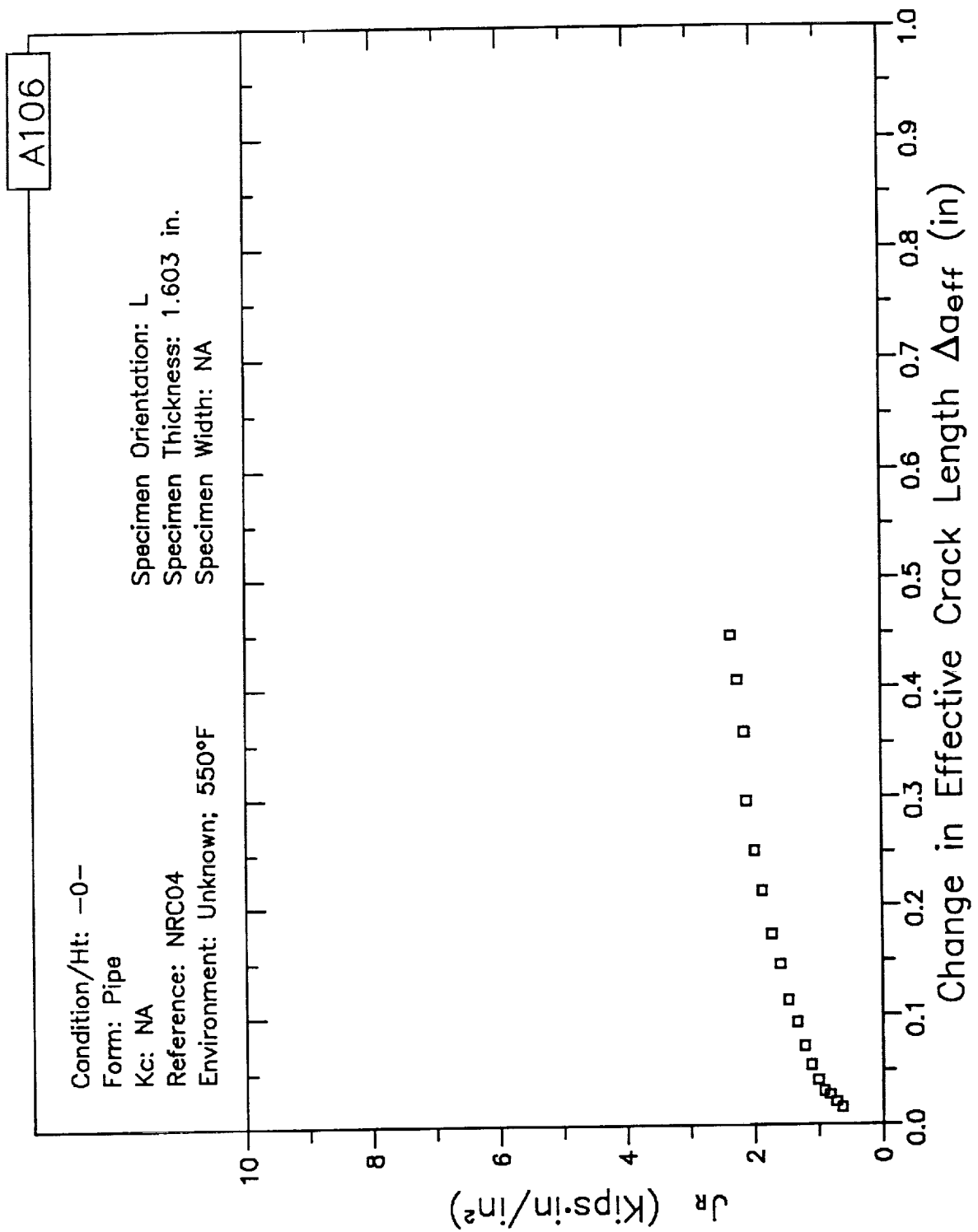
# RESISTANCE CURVE



# RESISTANCE CURVE



# RESISTANCE CURVE

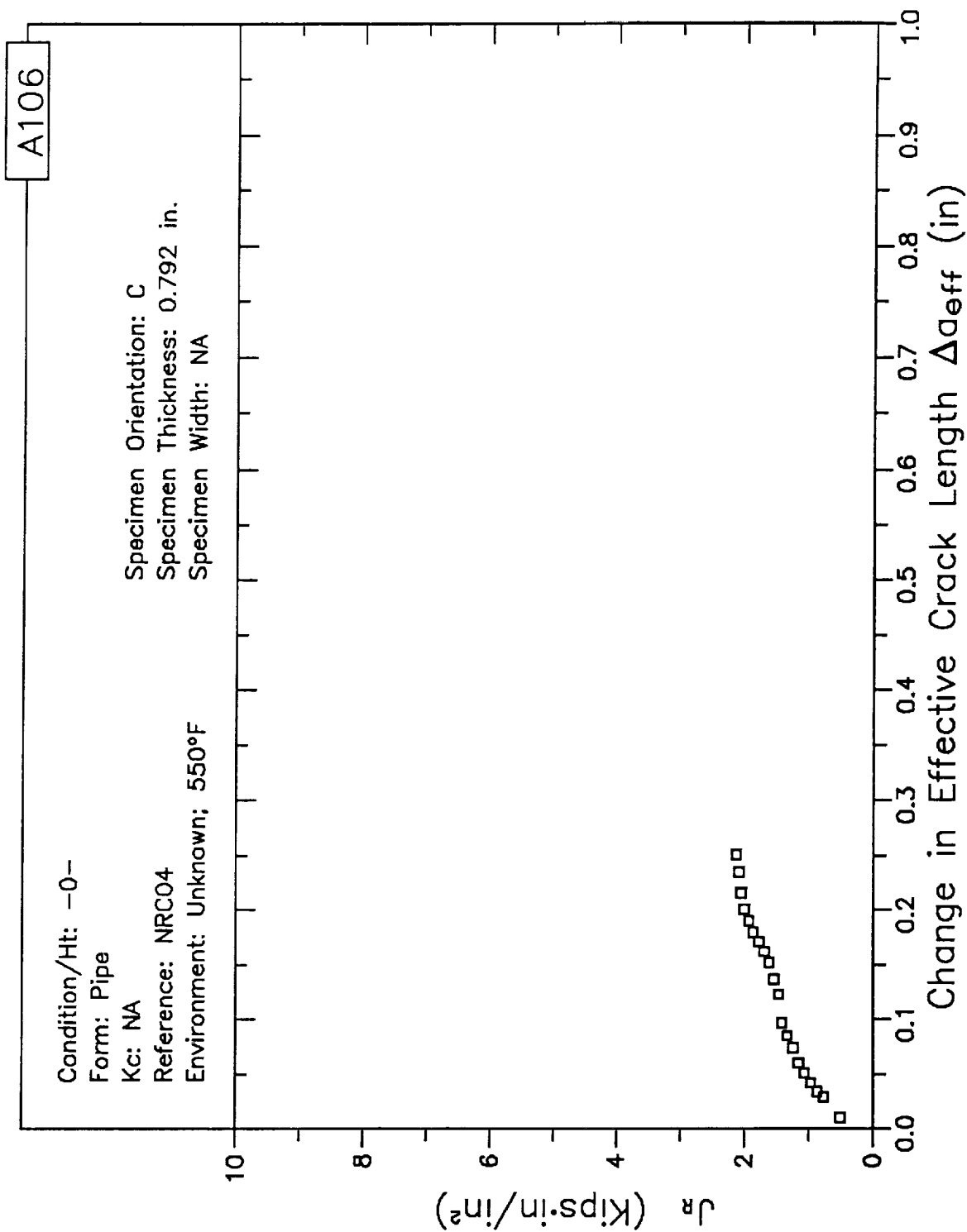


B3-16

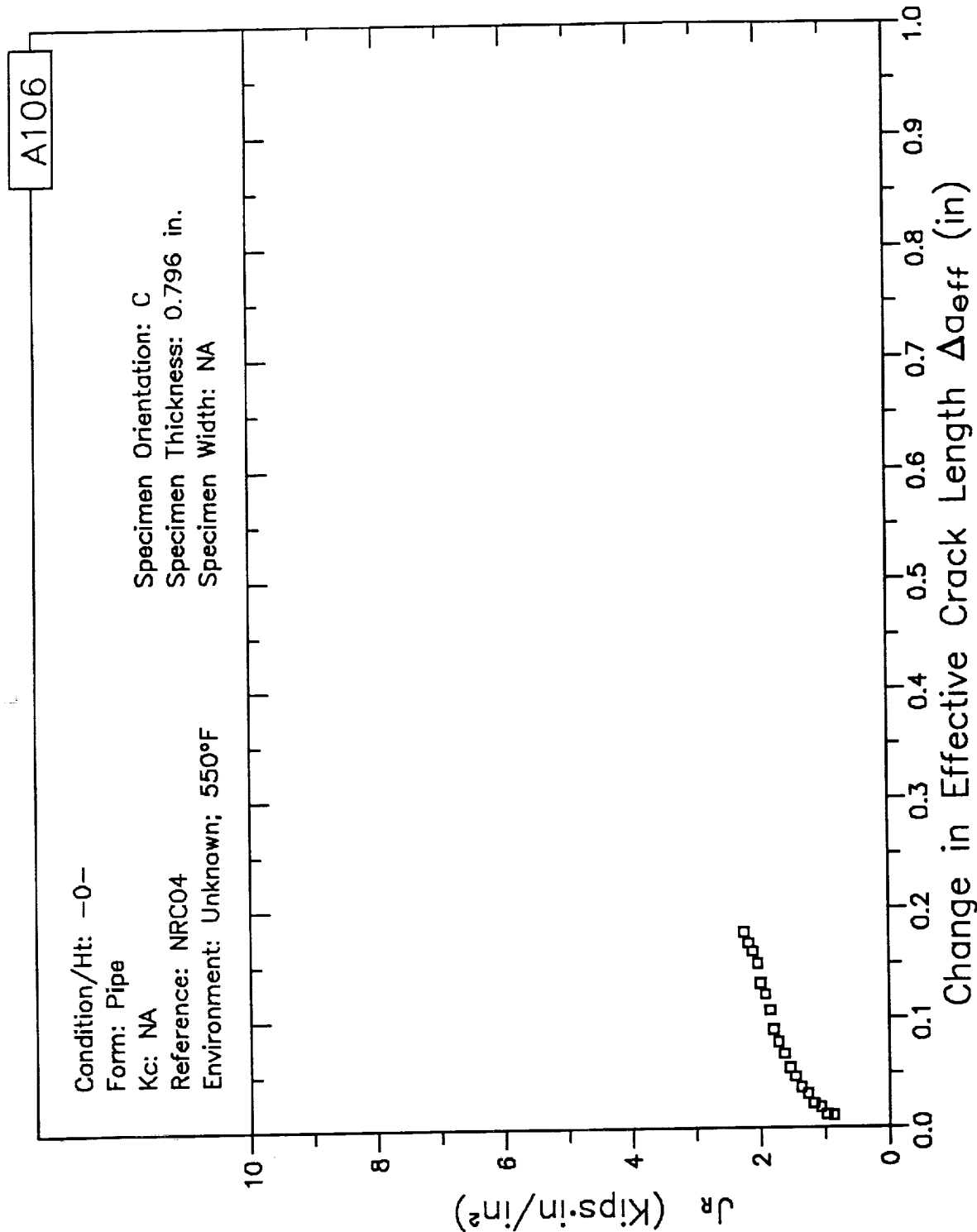
C-7.



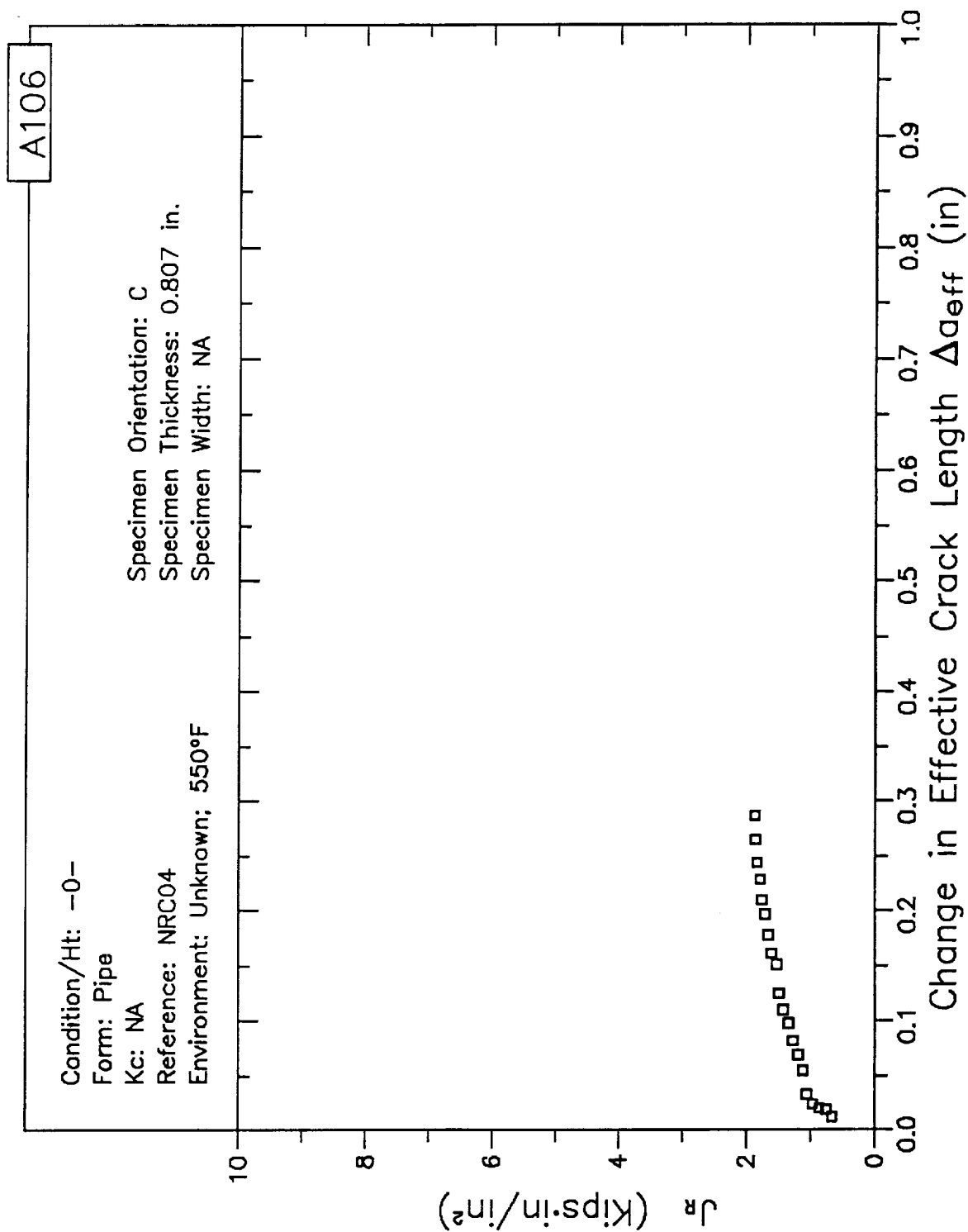
# RESISTANCE CURVE



# RESISTANCE CURVE



# RESISTANCE CURVE

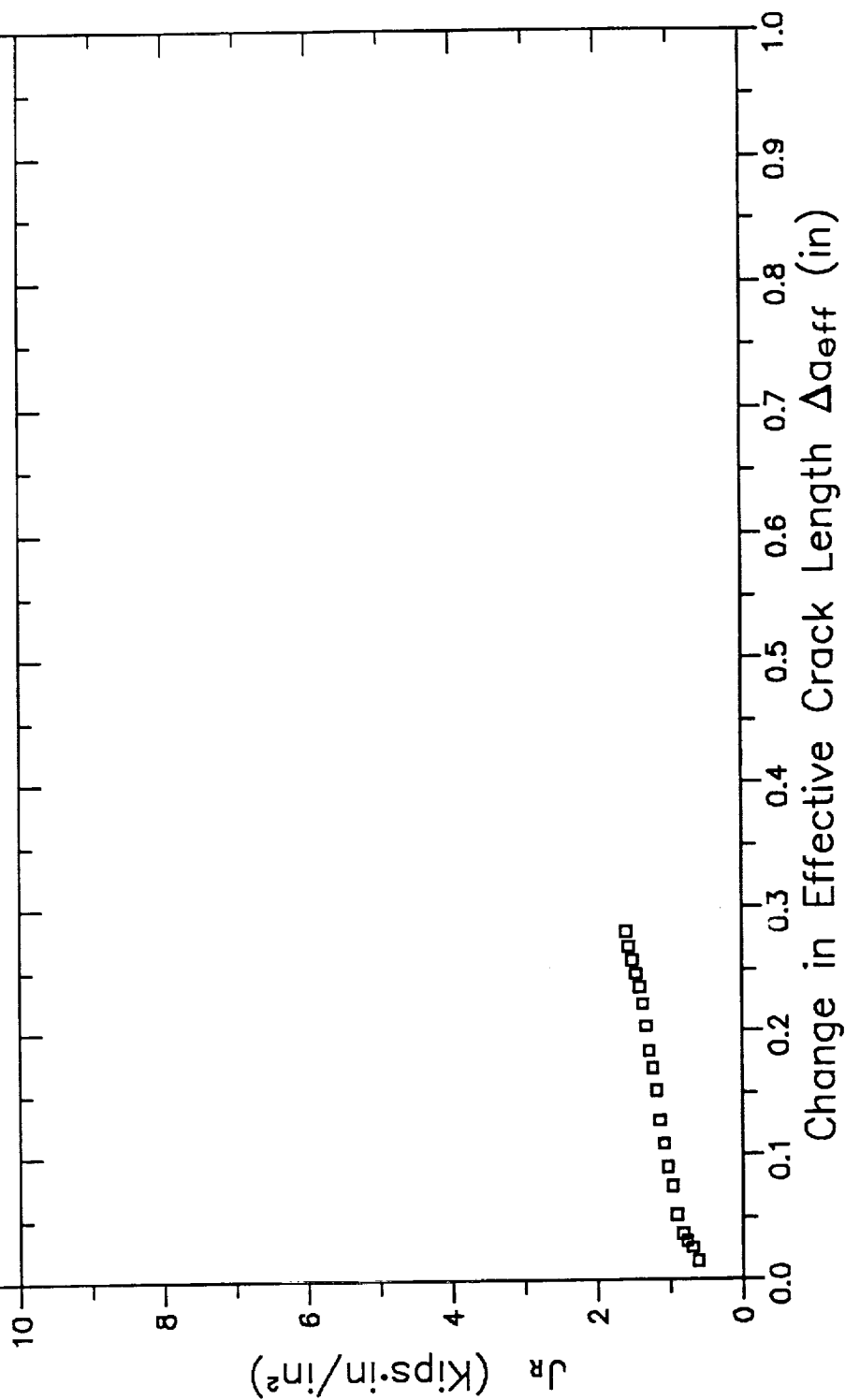


# RESISTANCE CURVE

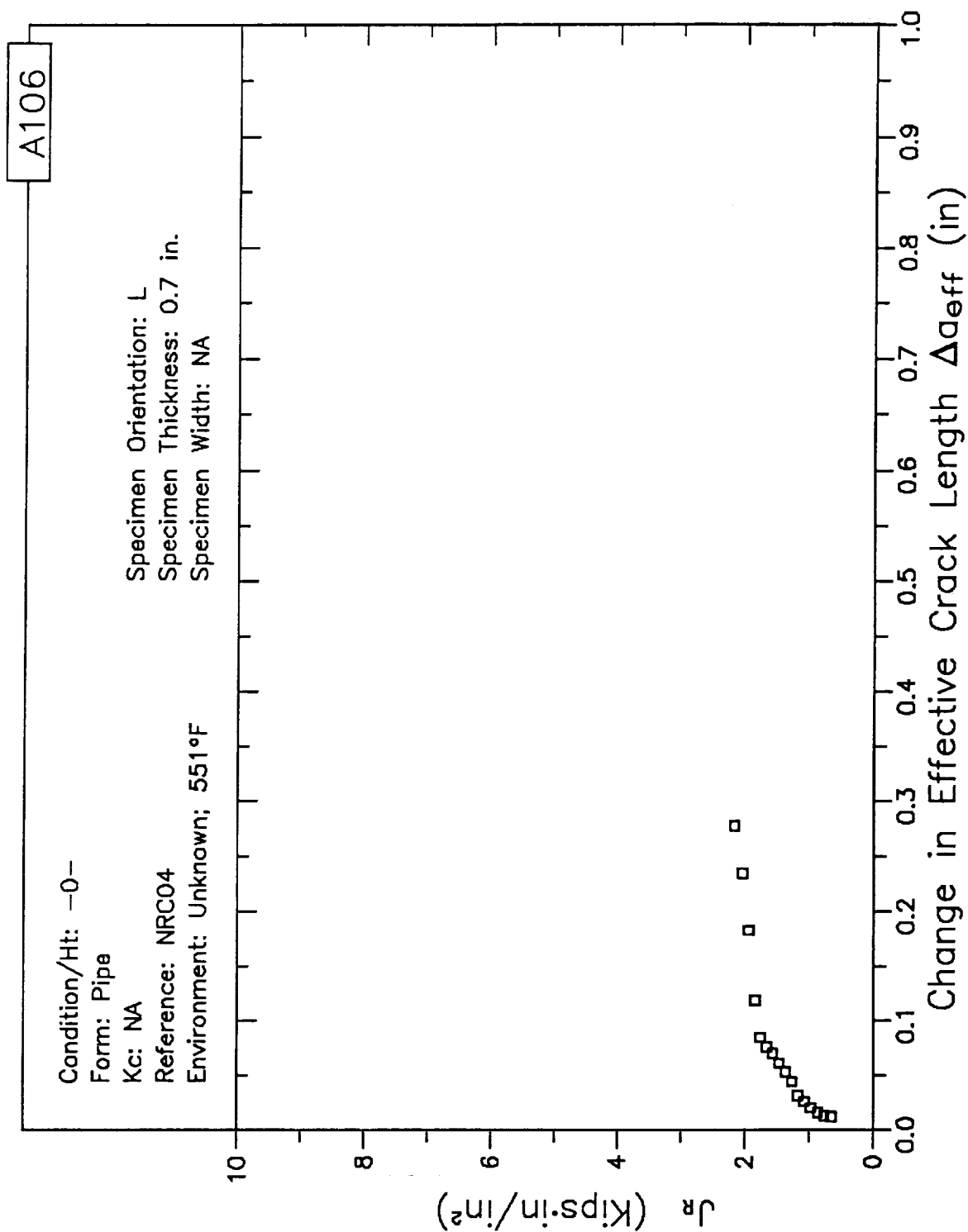
A106

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 550°F

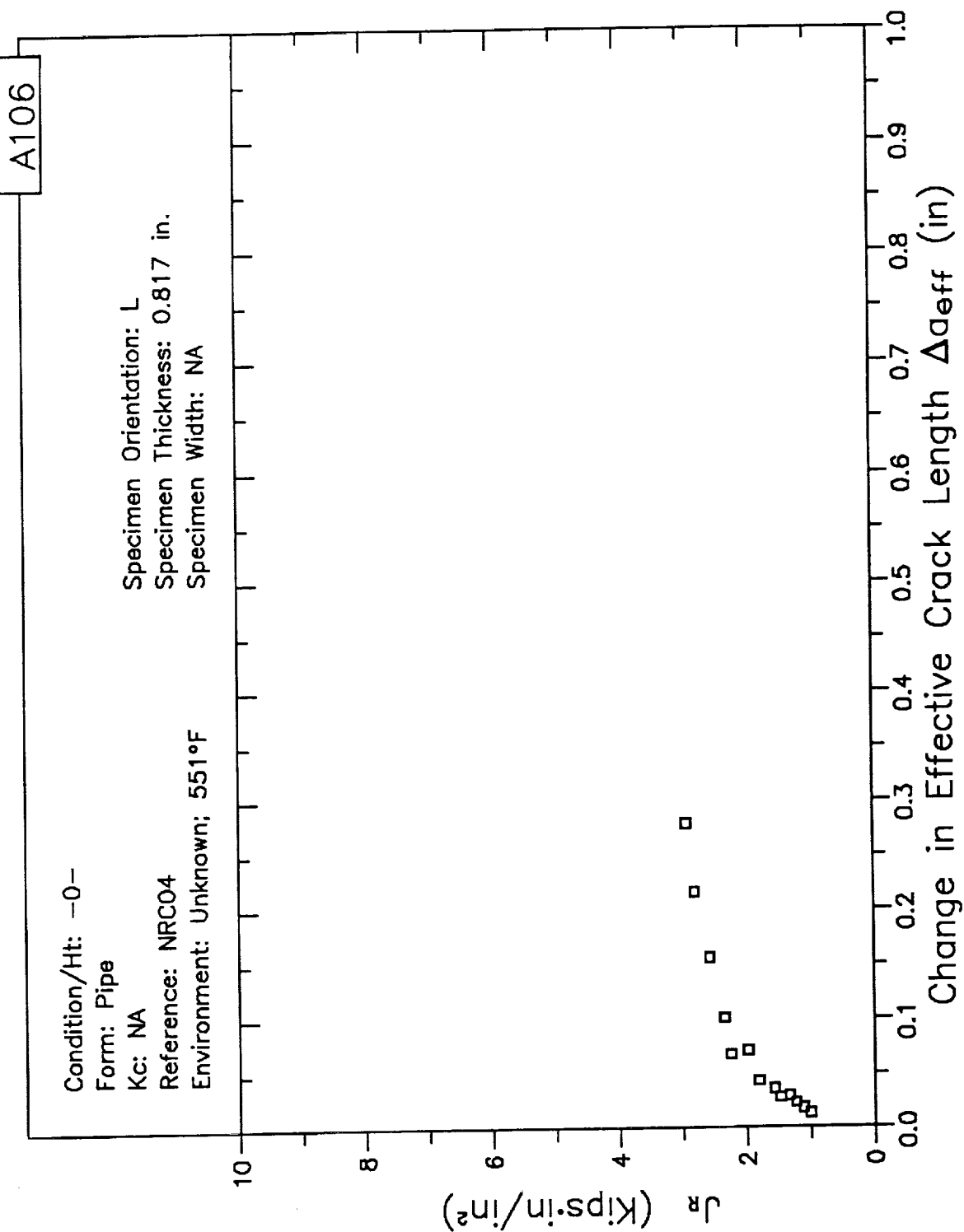
Specimen Orientation: C  
Specimen Thickness: 0.809 in.  
Specimen Width: NA



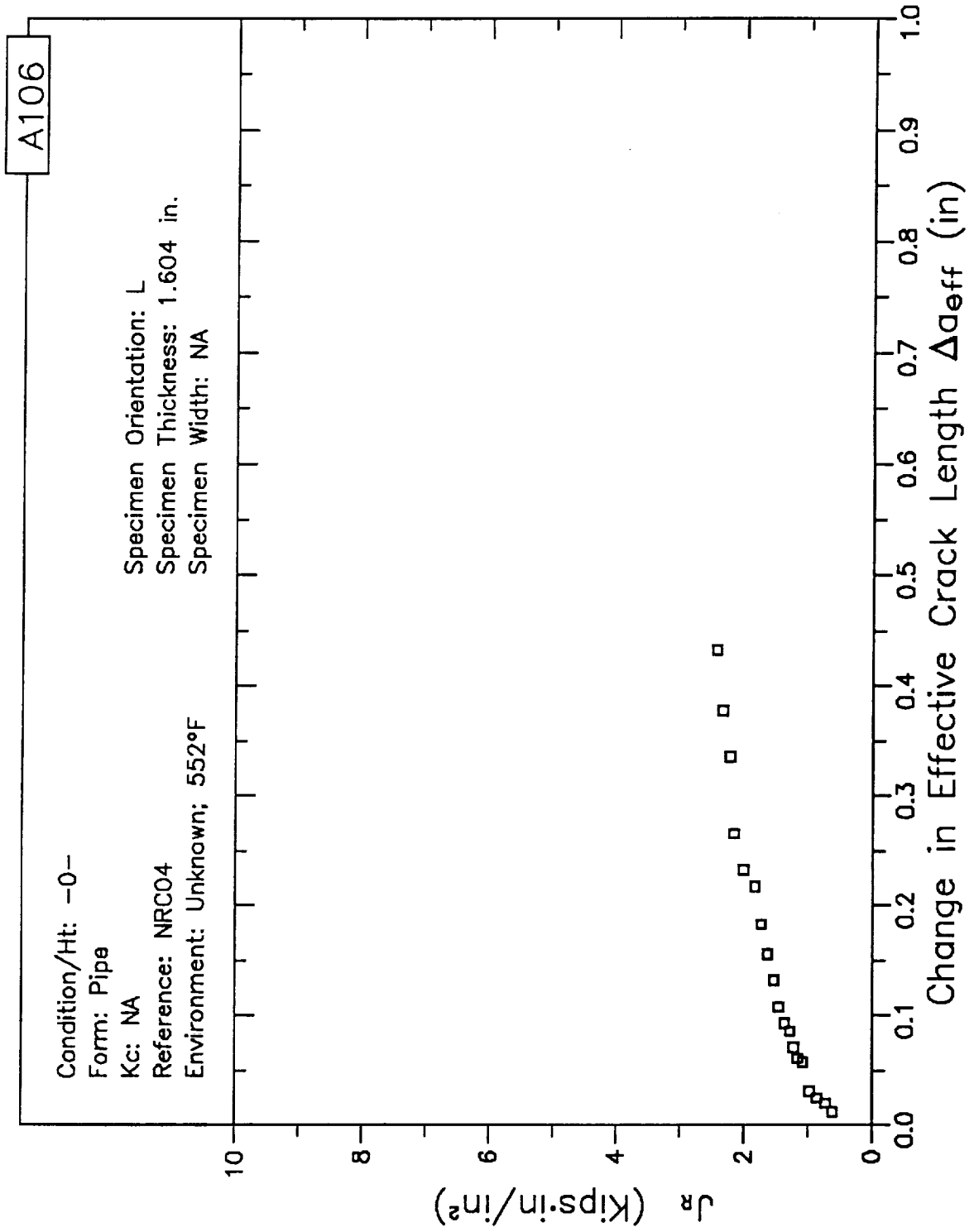
# RESISTANCE CURVE



# RESISTANCE CURVE



# RESISTANCE CURVE



# RESISTANCE CURVE

A155

Condition/Ht: -0-

Form: Pipe

Kc: NA

Reference: REG03

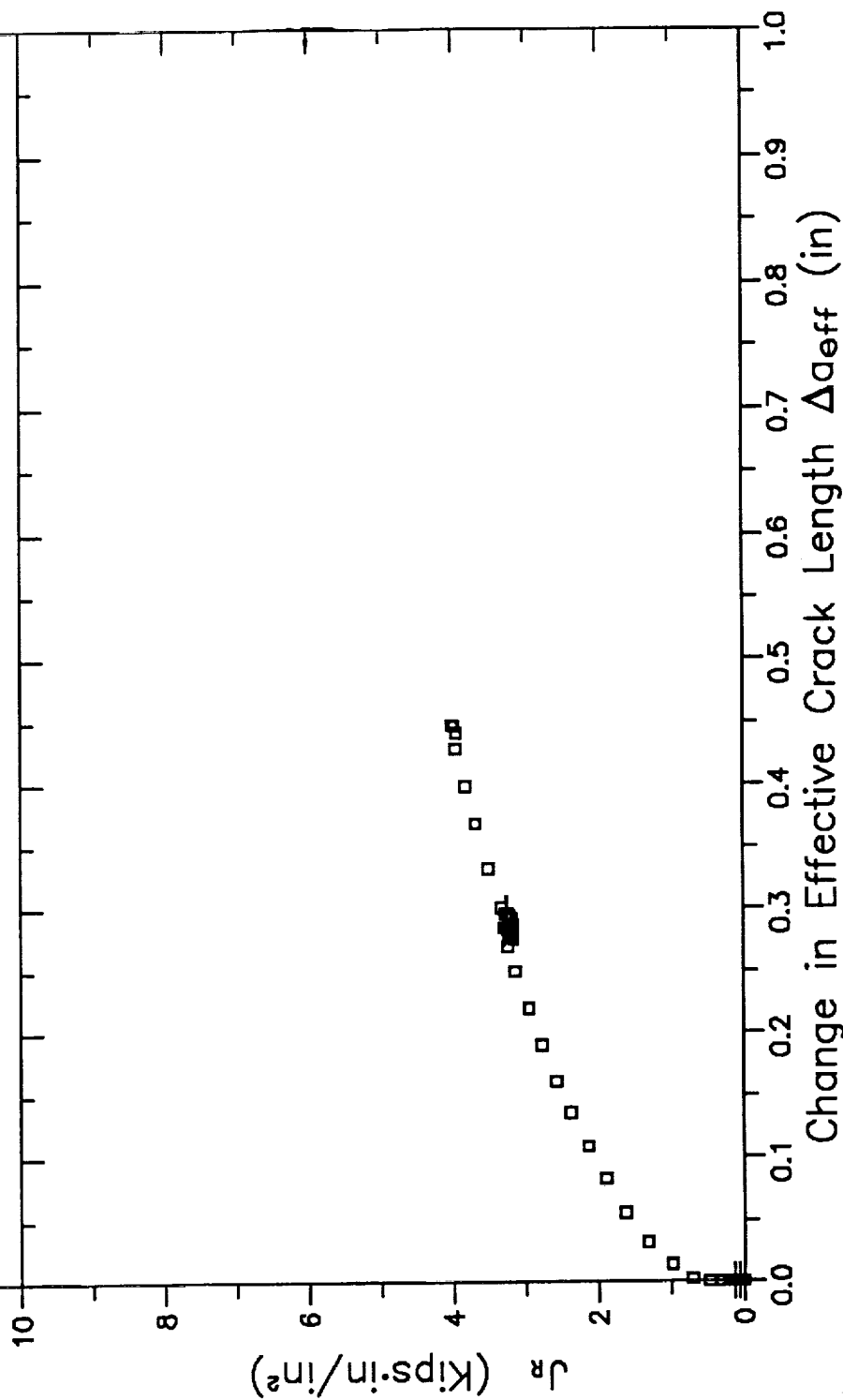
Environment: Unknown; 300.2°F

Type: Compact Specimen (Side Grooved)

Specimen Orientation: L-C

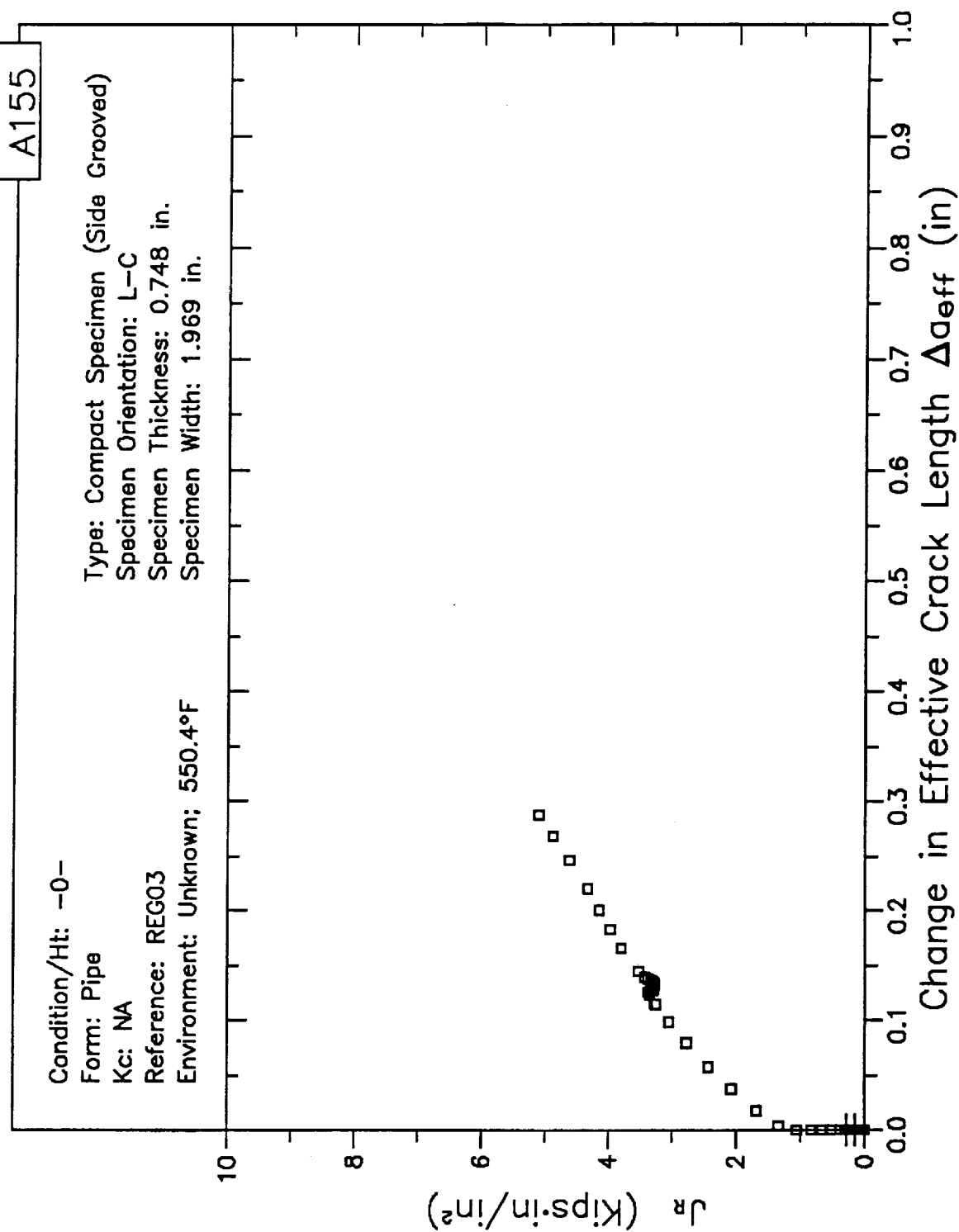
Specimen Thickness: NA

Specimen Width: 1.969 in.





# RESISTANCE CURVE

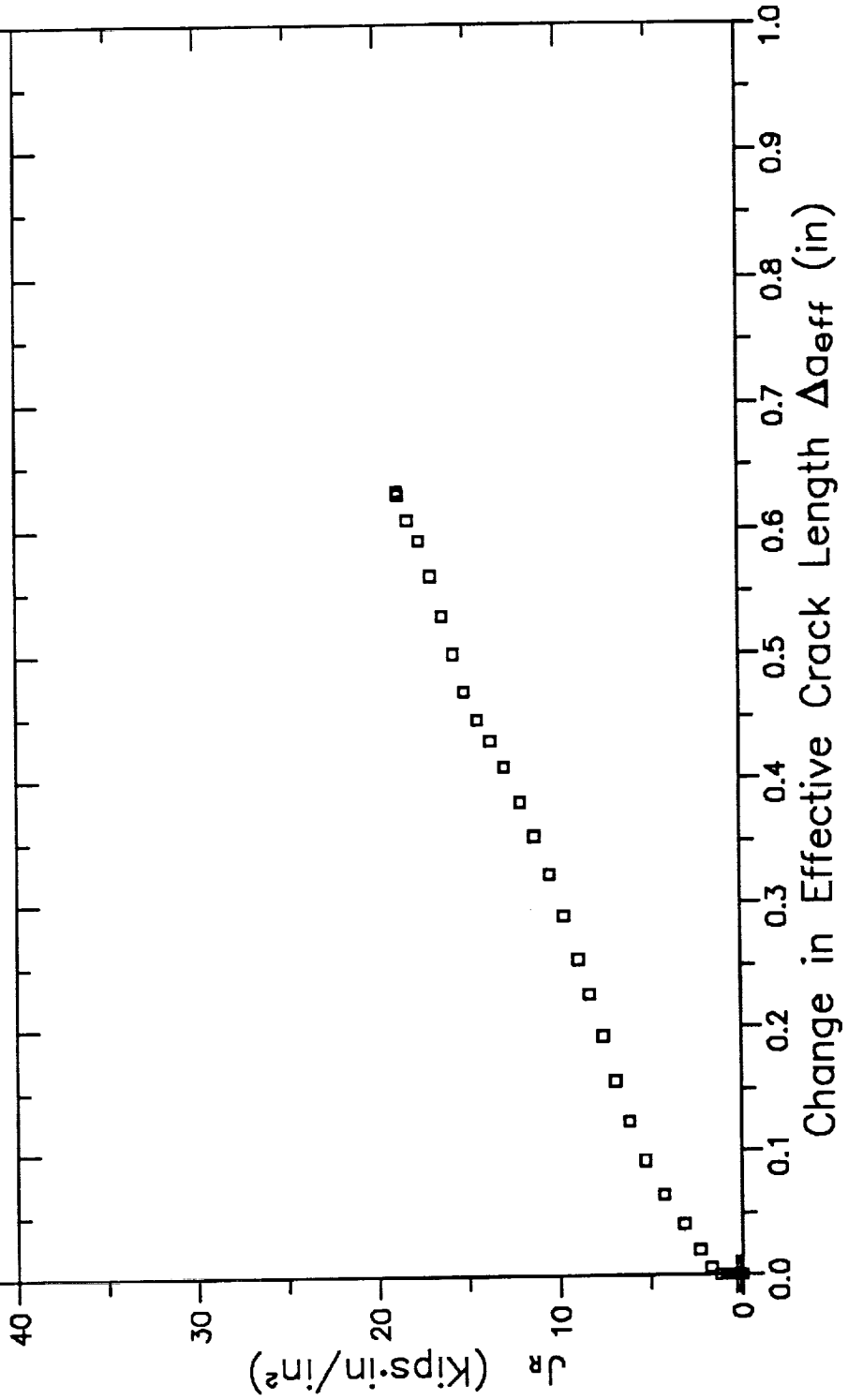


# RESISTANCE CURVE

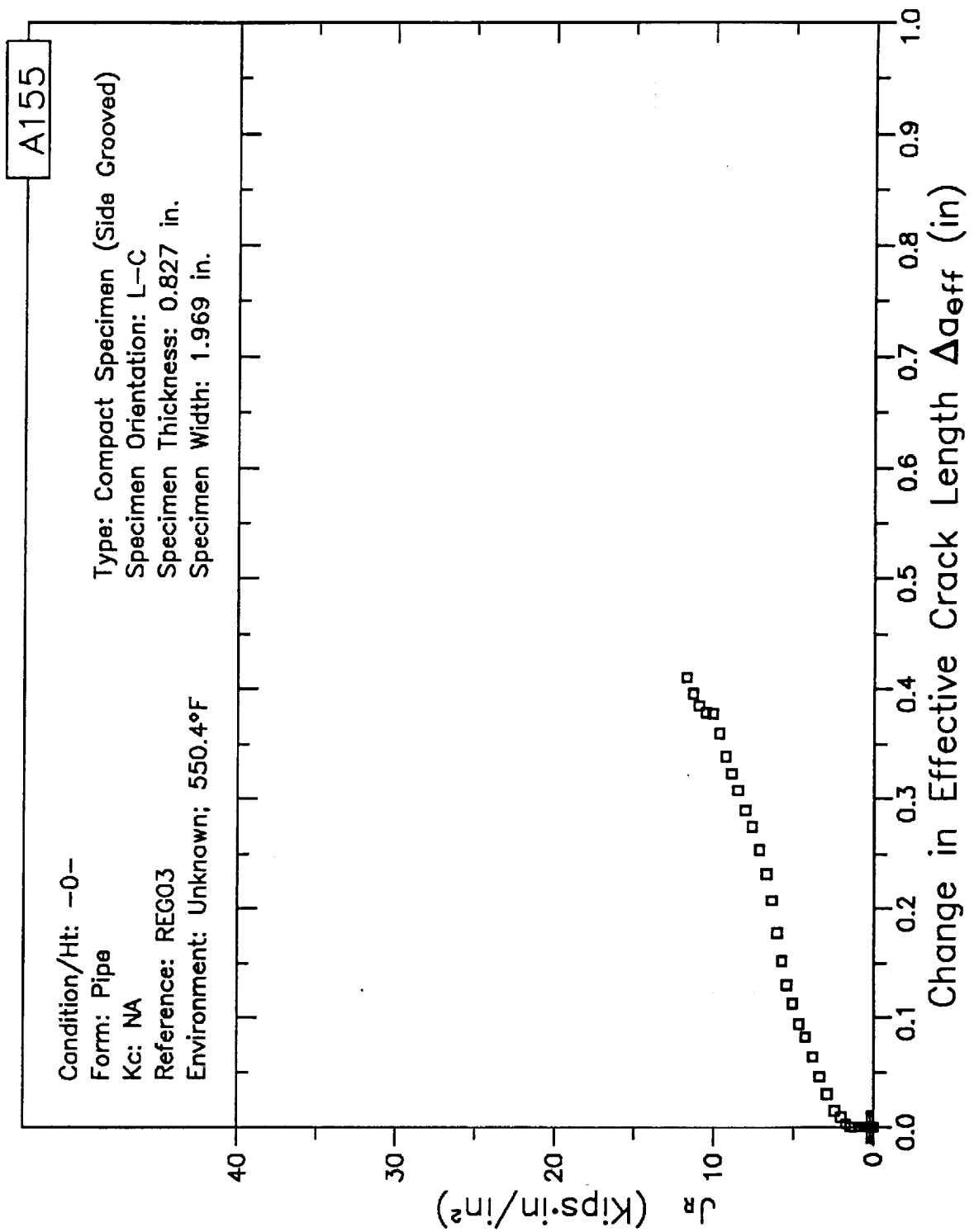
A155

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG03  
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 0.748 in.  
Specimen Width: 1.969 in.



# RESISTANCE CURVE

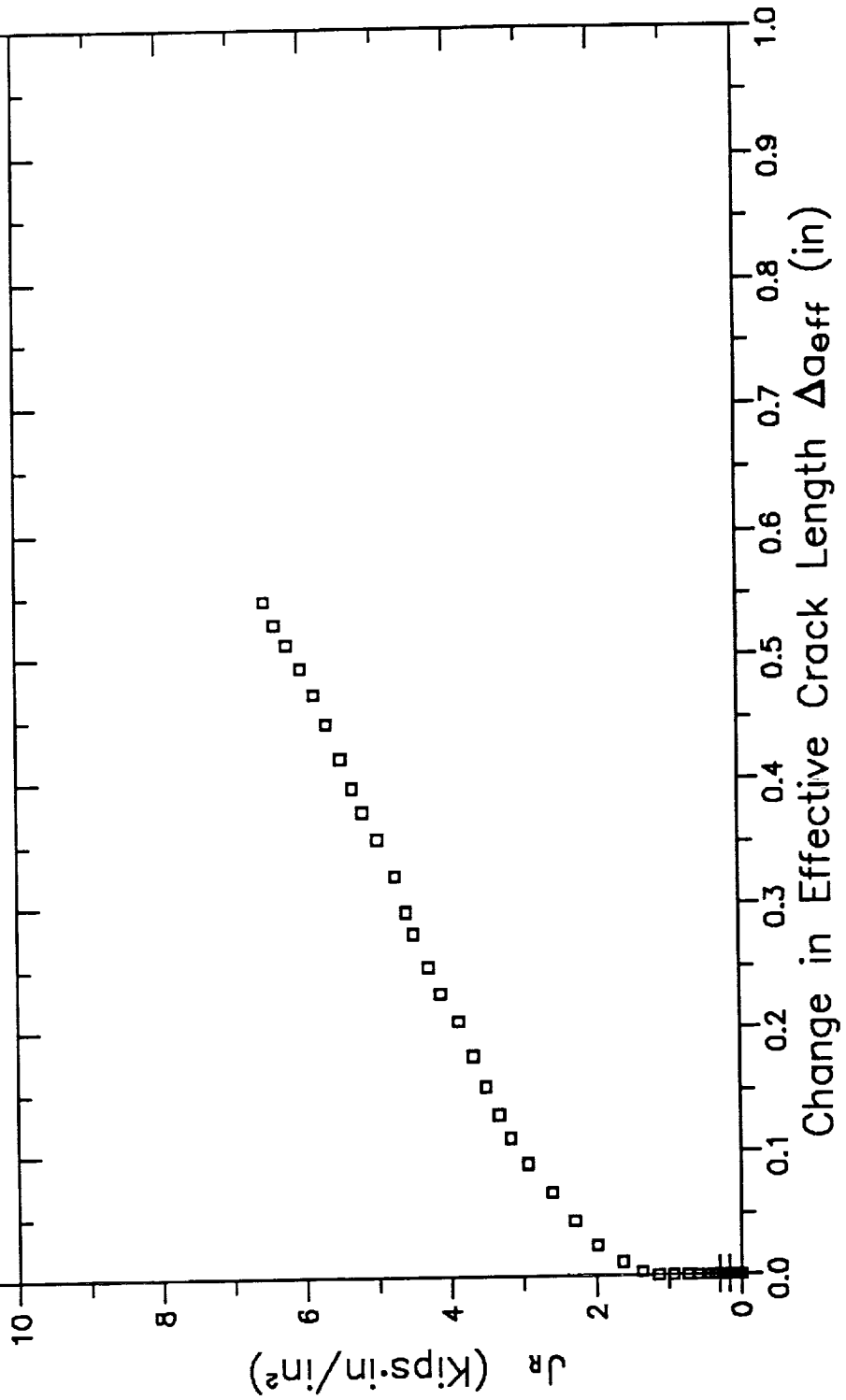


# RESISTANCE CURVE

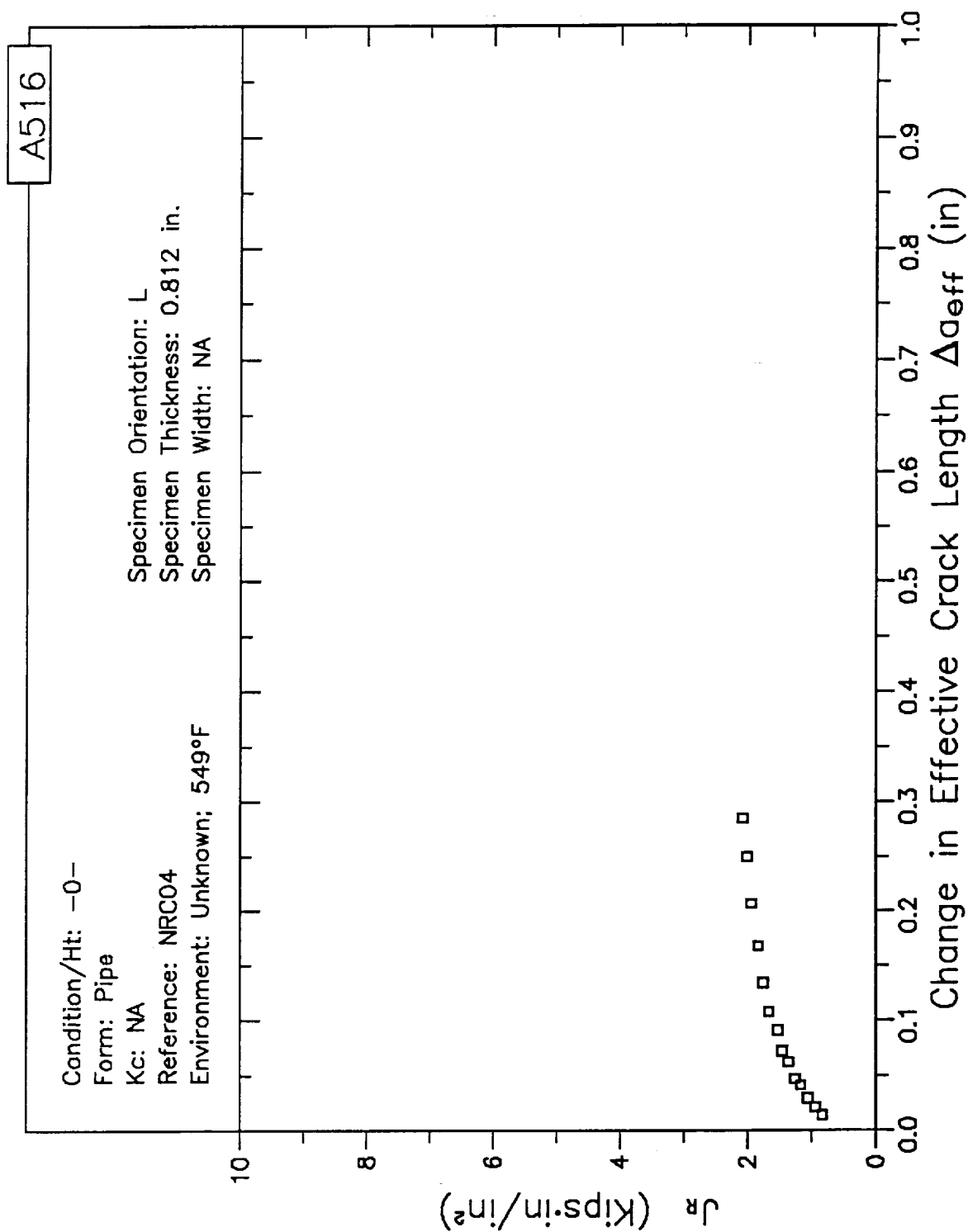
A155

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG03  
Environment: Unknown; 550.4°F

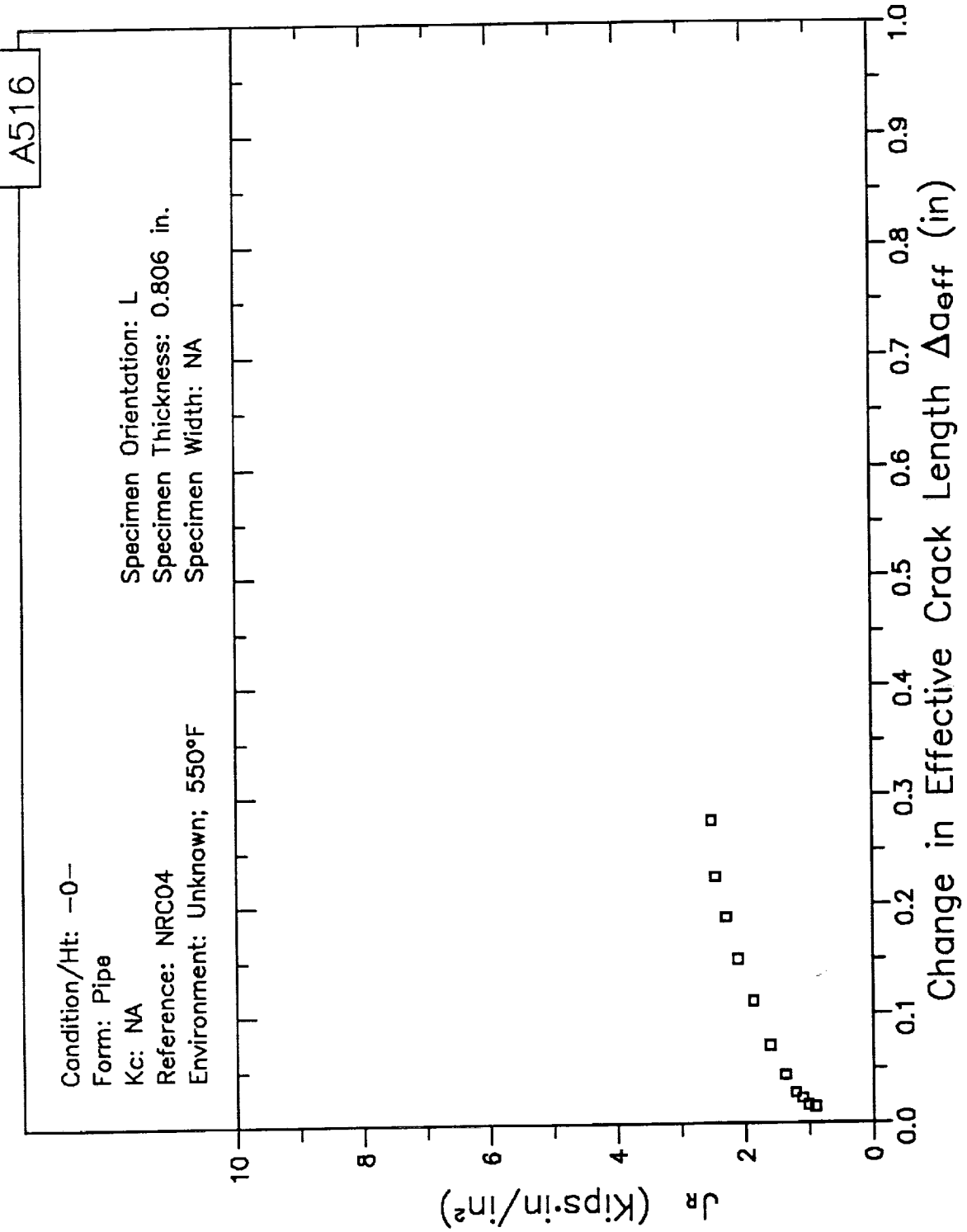
Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 0.827 in.  
Specimen Width: 1.969 in.



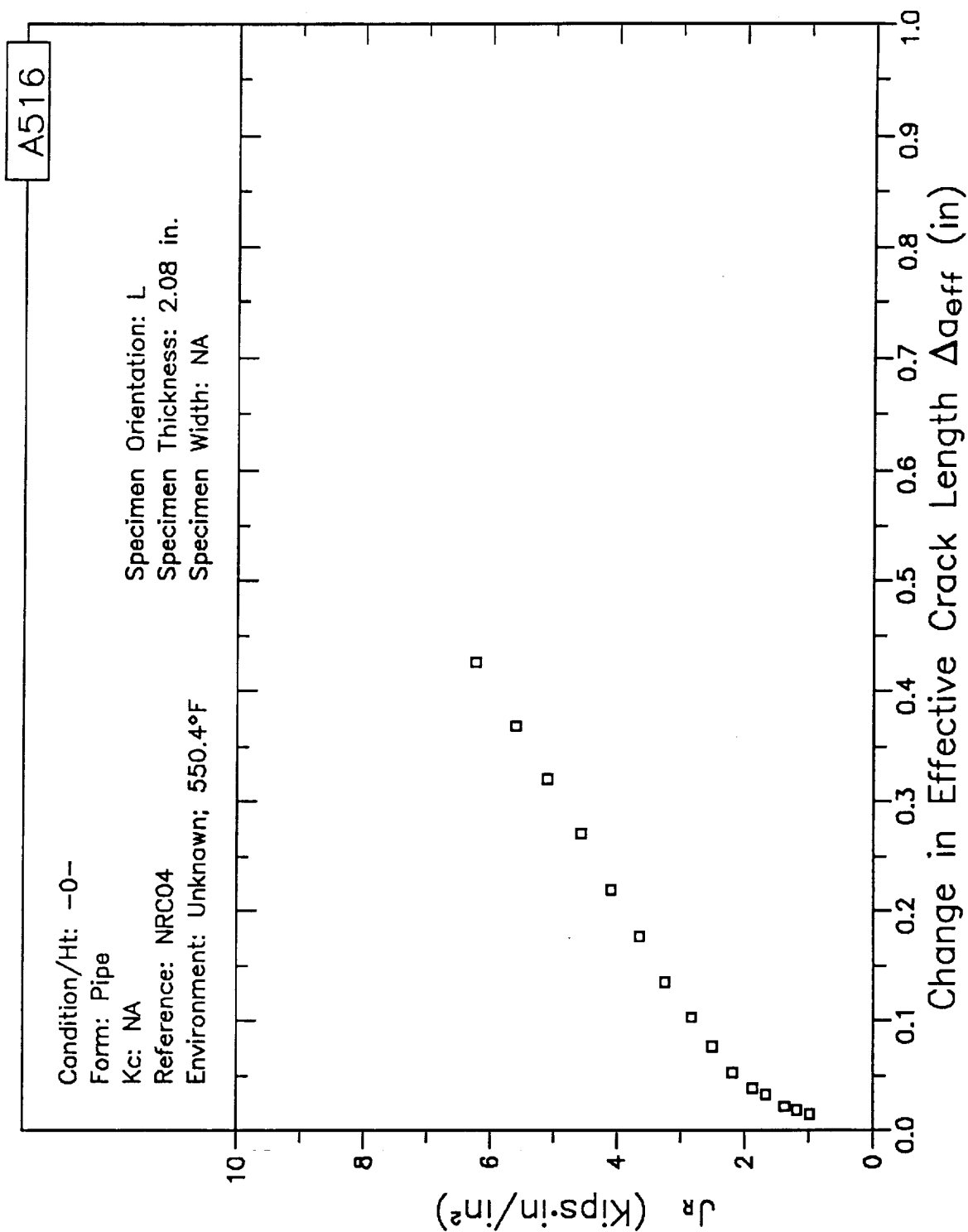
# RESISTANCE CURVE



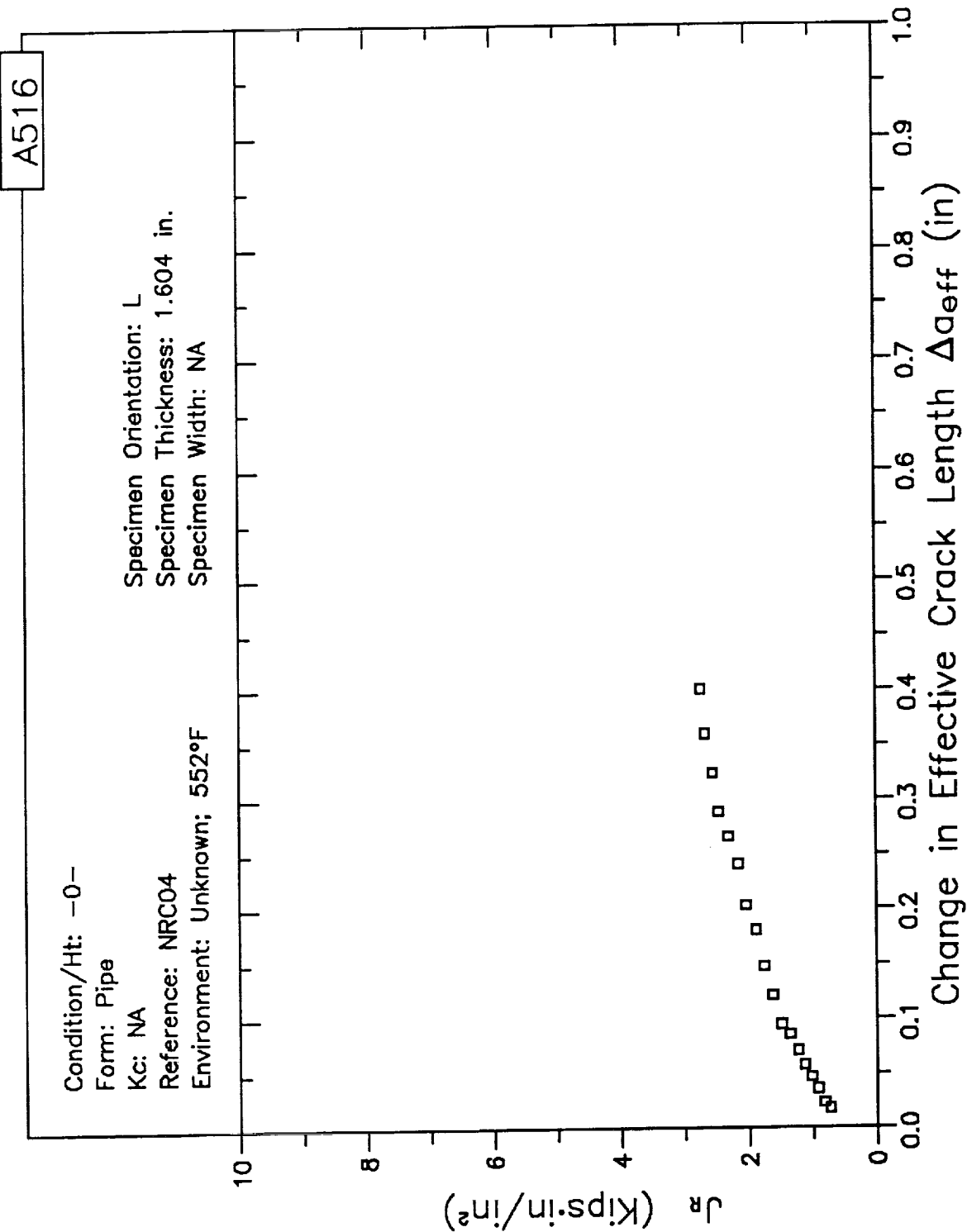
# RESISTANCE CURVE



# RESISTANCE CURVE

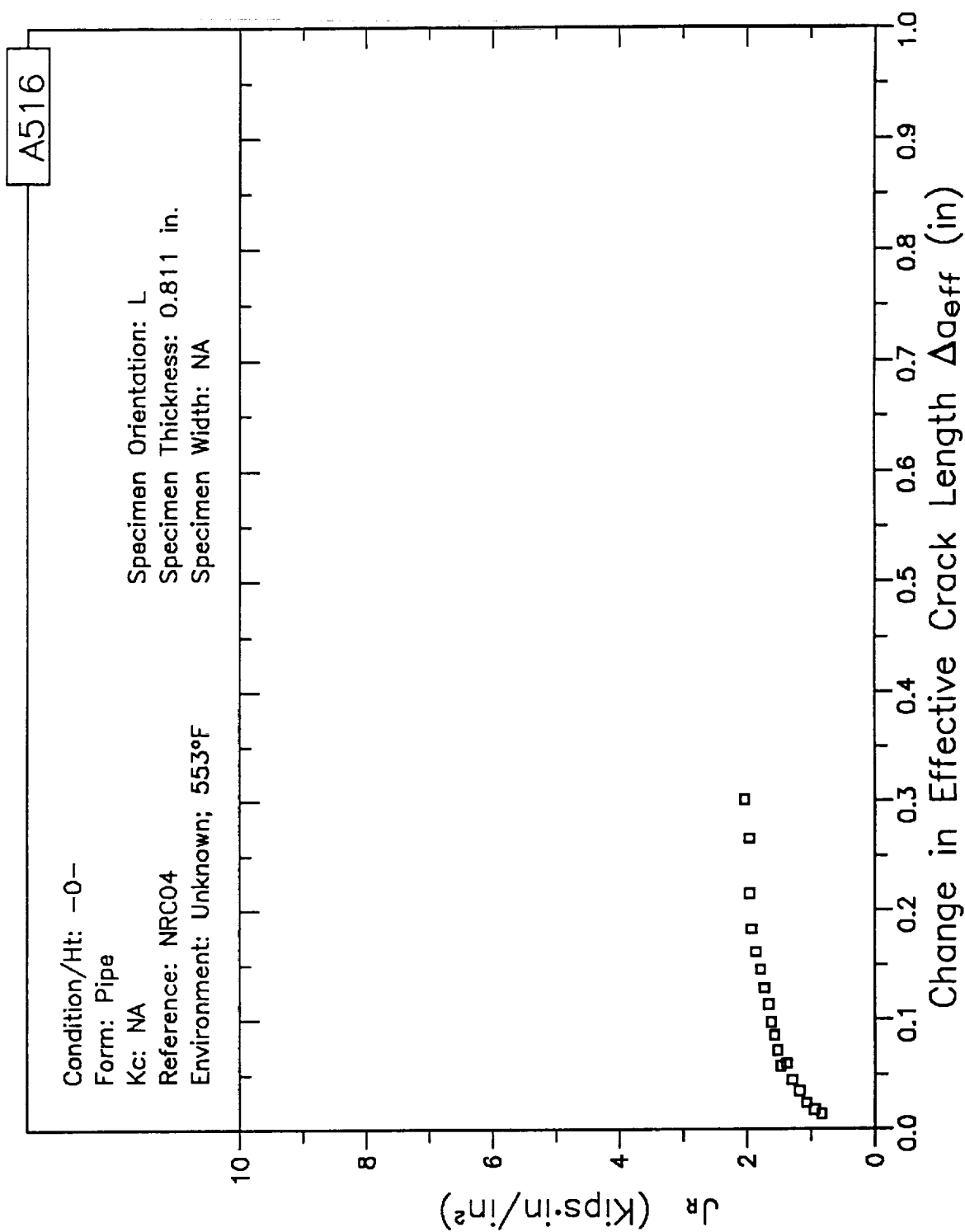


# RESISTANCE CURVE

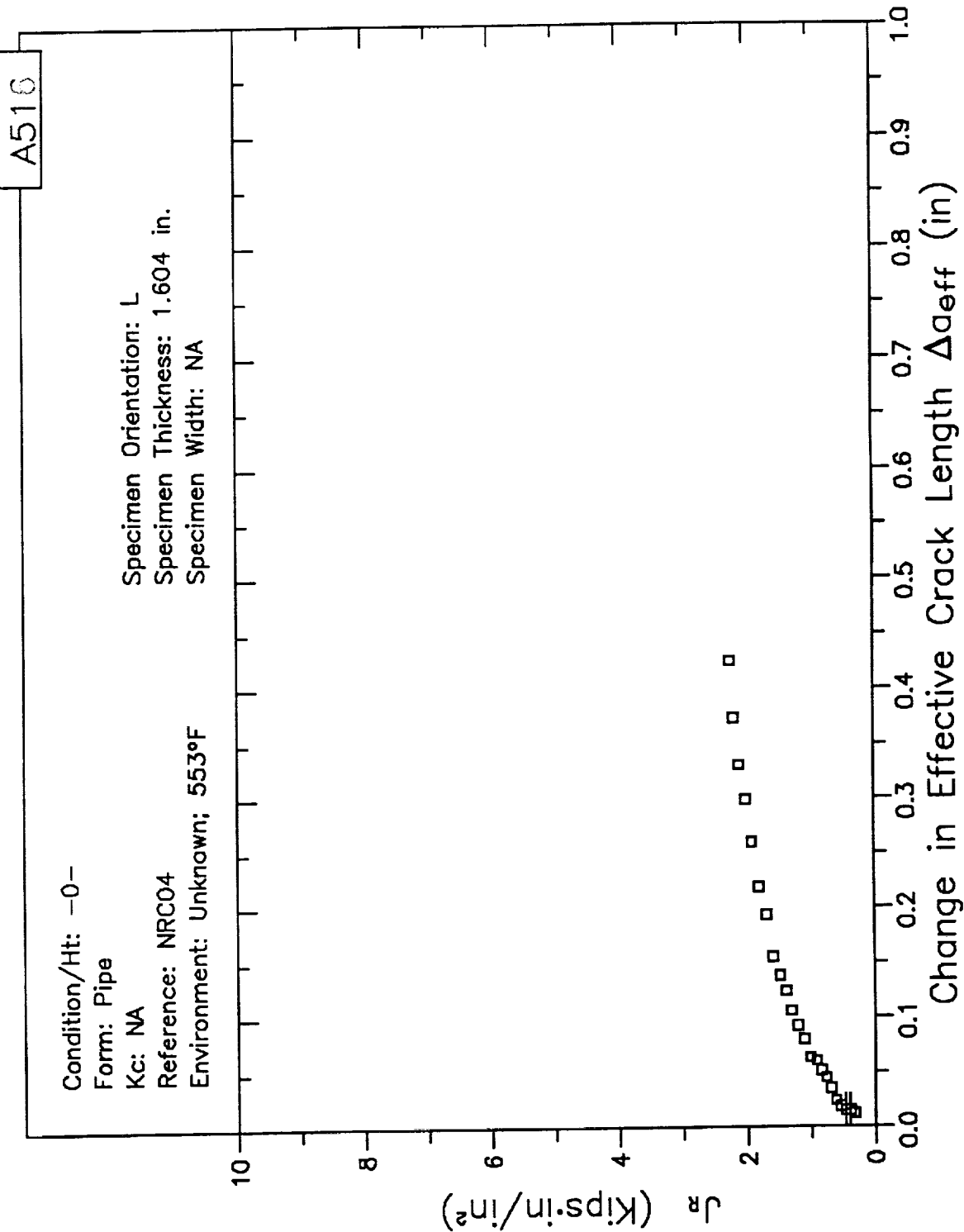




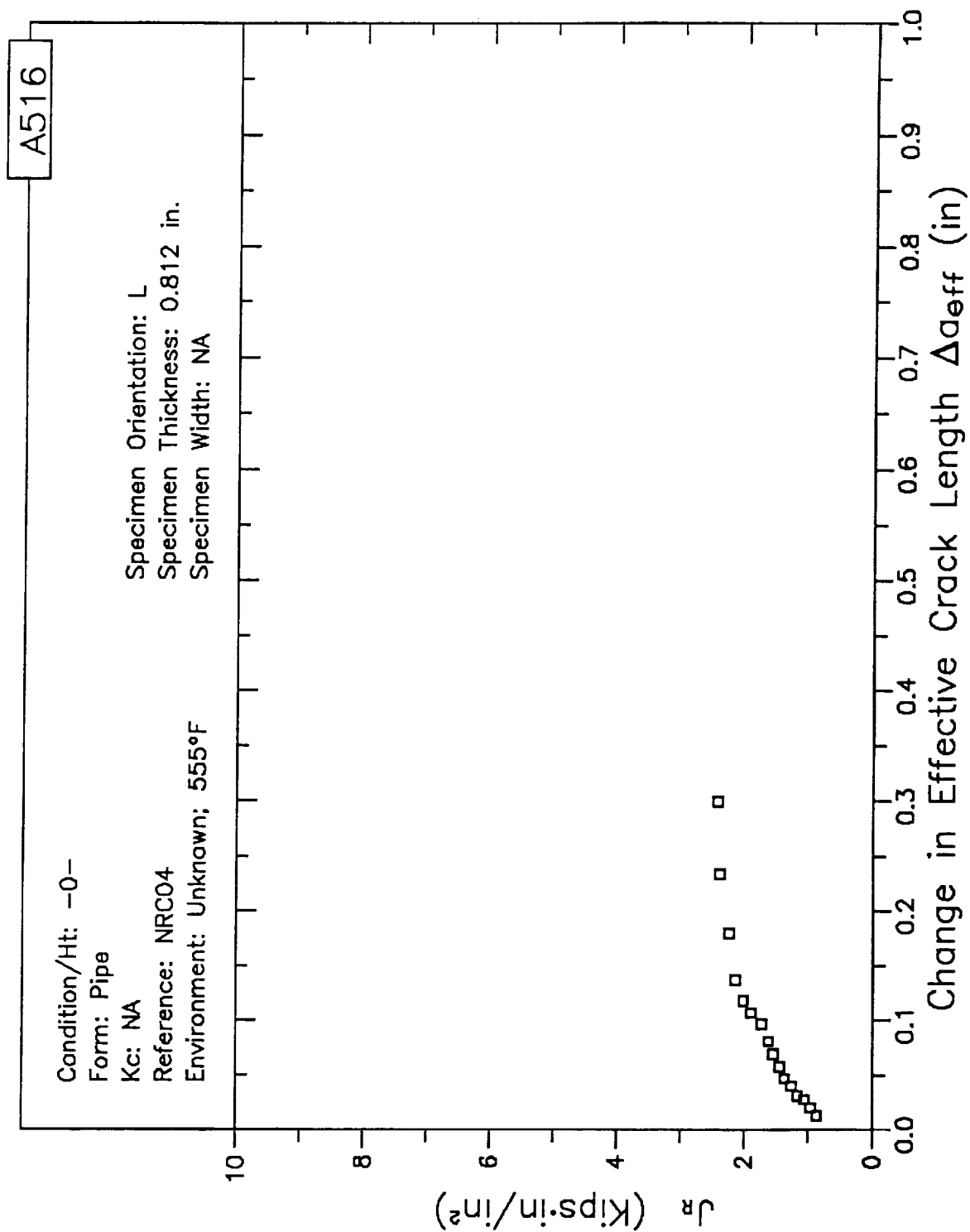
# RESISTANCE CURVE



# RESISTANCE CURVE



# RESISTANCE CURVE

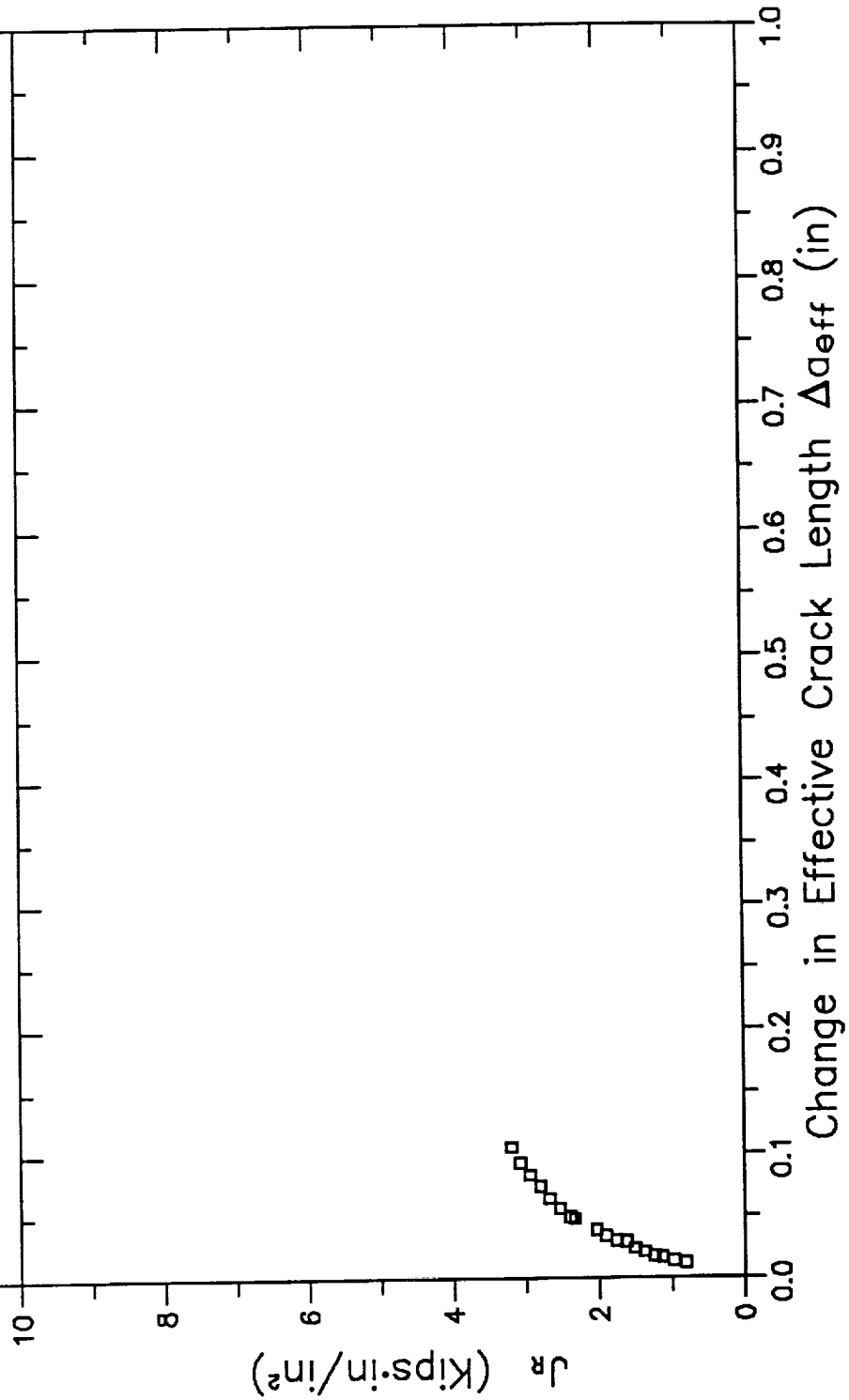


# RESISTANCE CURVE

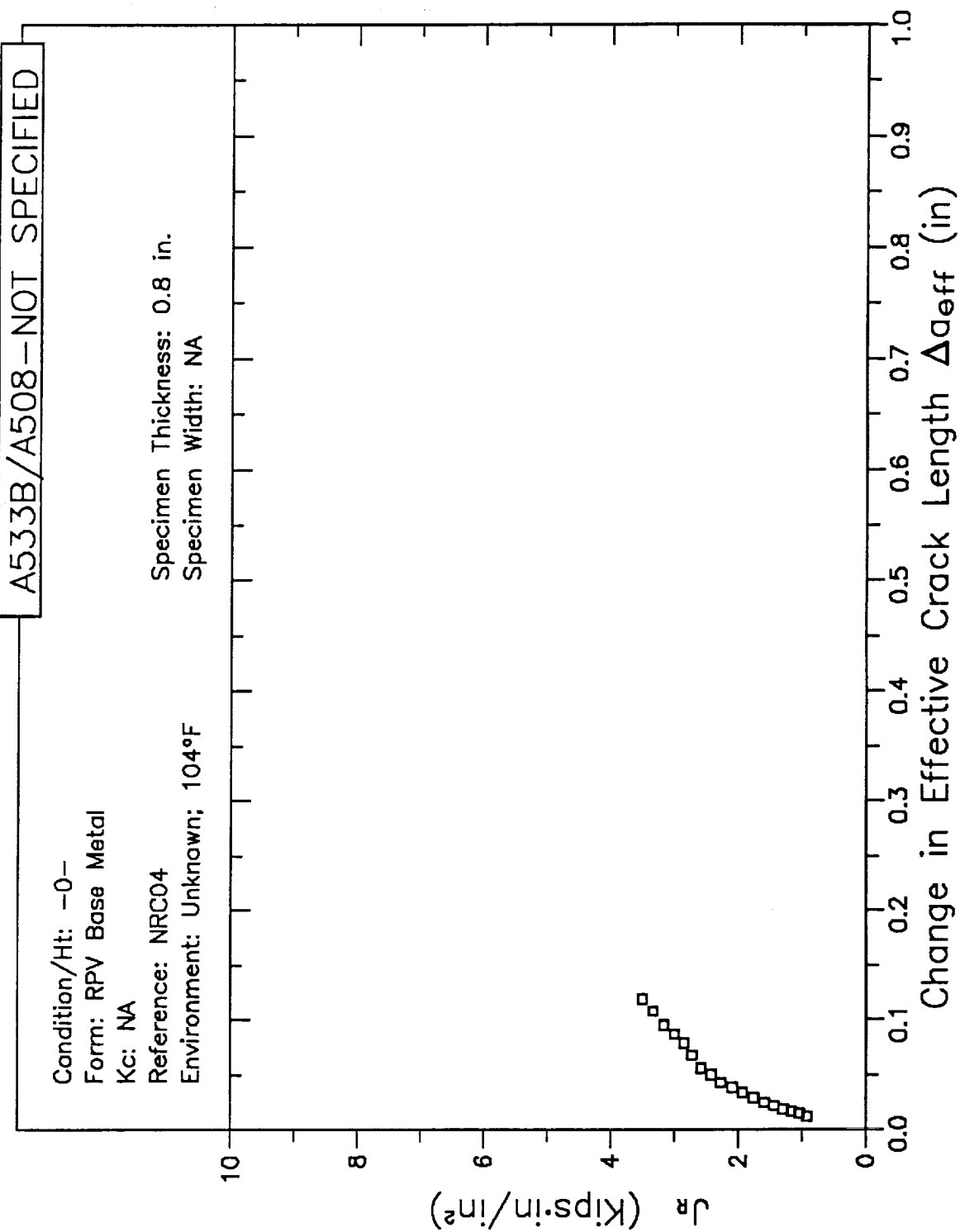
A533B/A508—NOT SPECIFIED

Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 104°F

Specimen Thickness: 0.8 in.  
Specimen Width: NA



# RESISTANCE CURVE

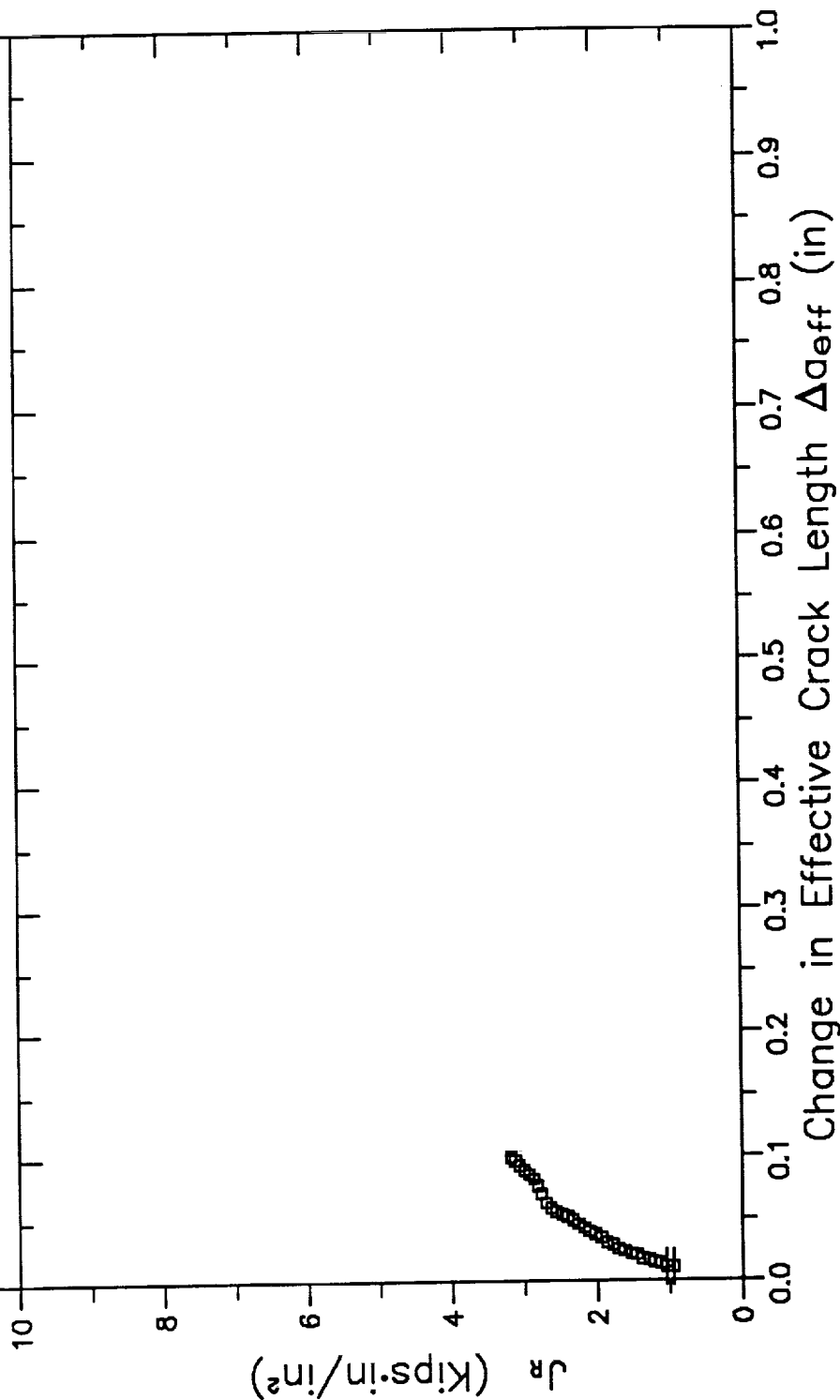


# RESISTANCE CURVE

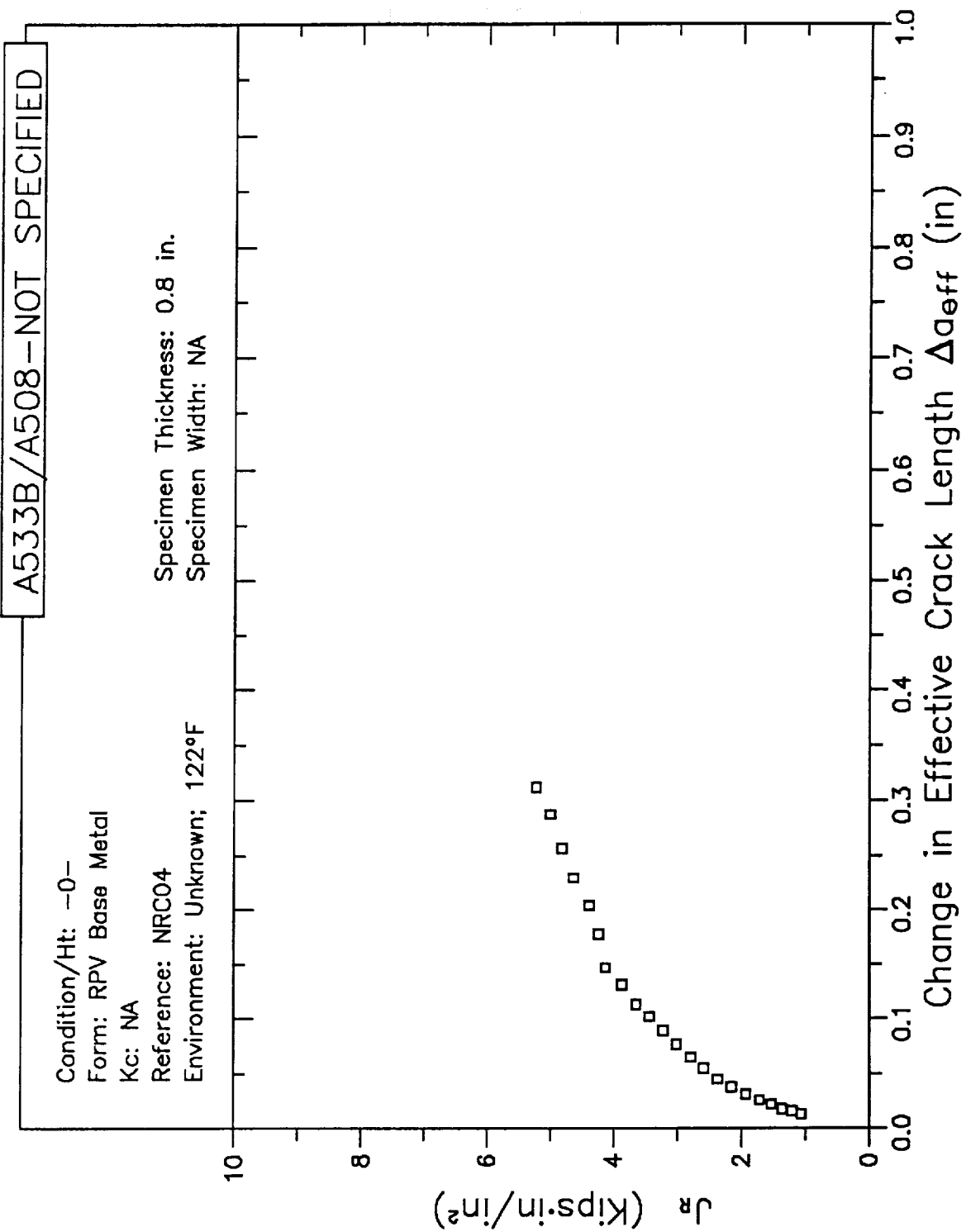
A533B/A508—NOT SPECIFIED

Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 122°F

Specimen Thickness: 0.8 in.  
Specimen Width: NA



# RESISTANCE CURVE

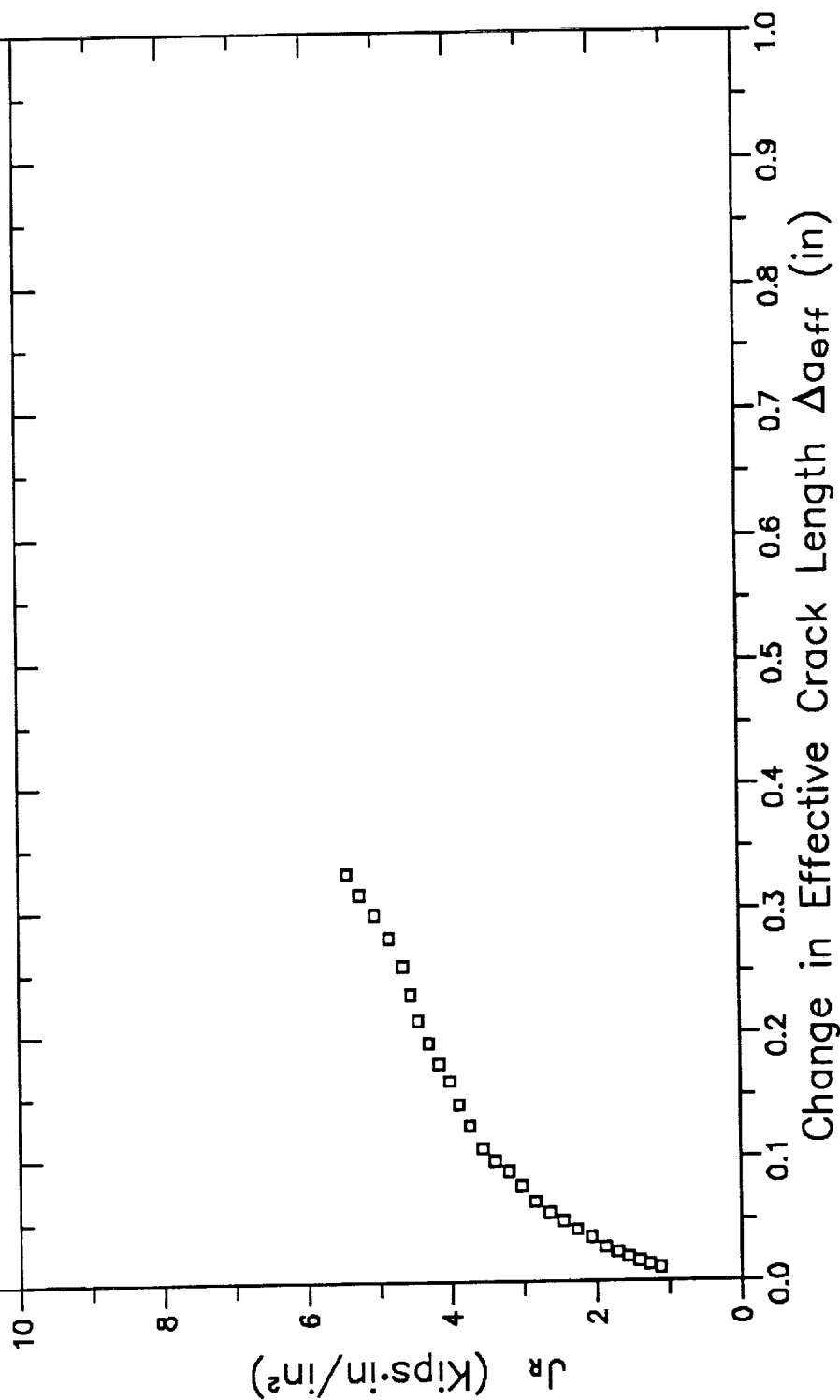


# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

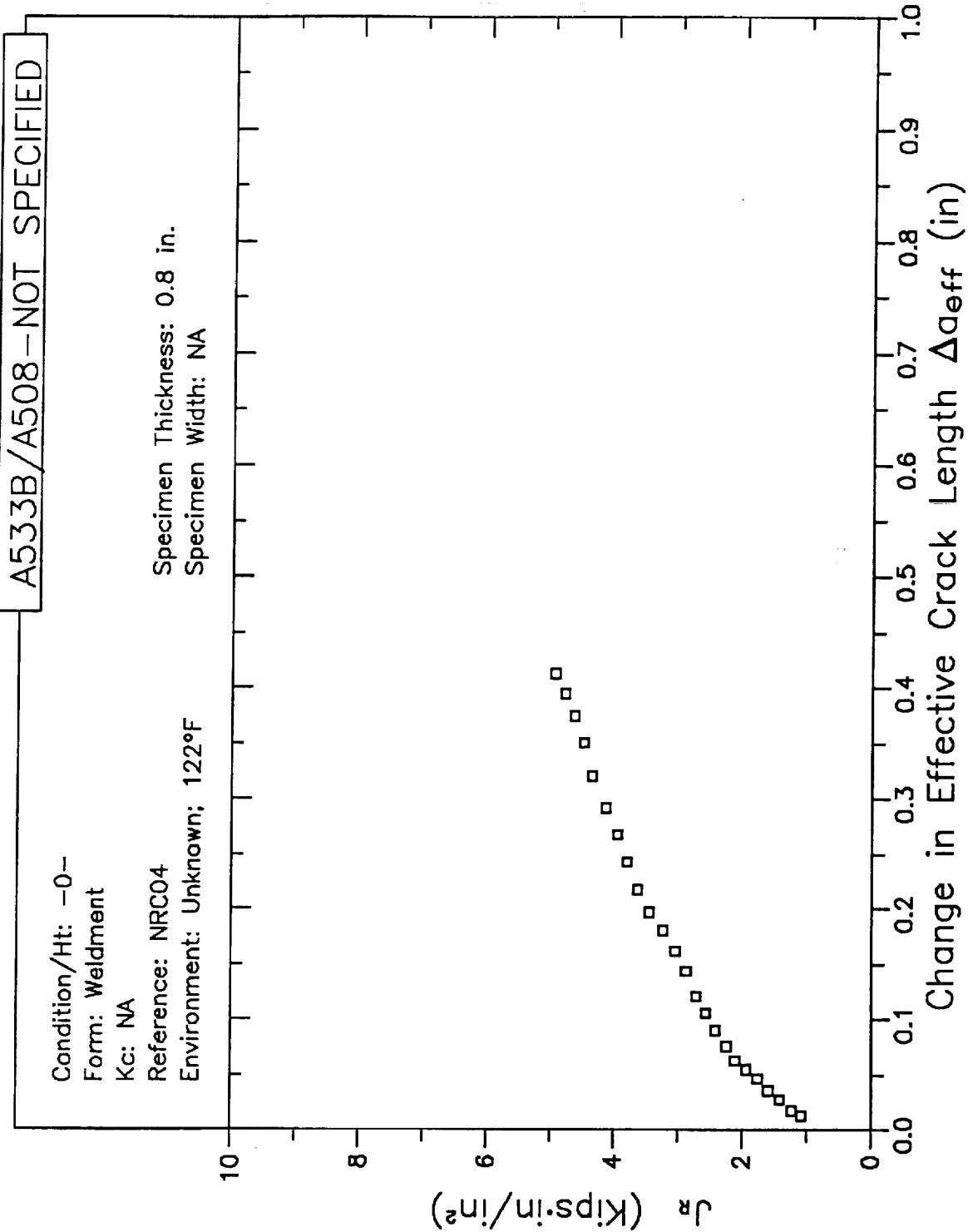
Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 122°F

Specimen Thickness: 0.8 in.  
Specimen Width: NA





# RESISTANCE CURVE

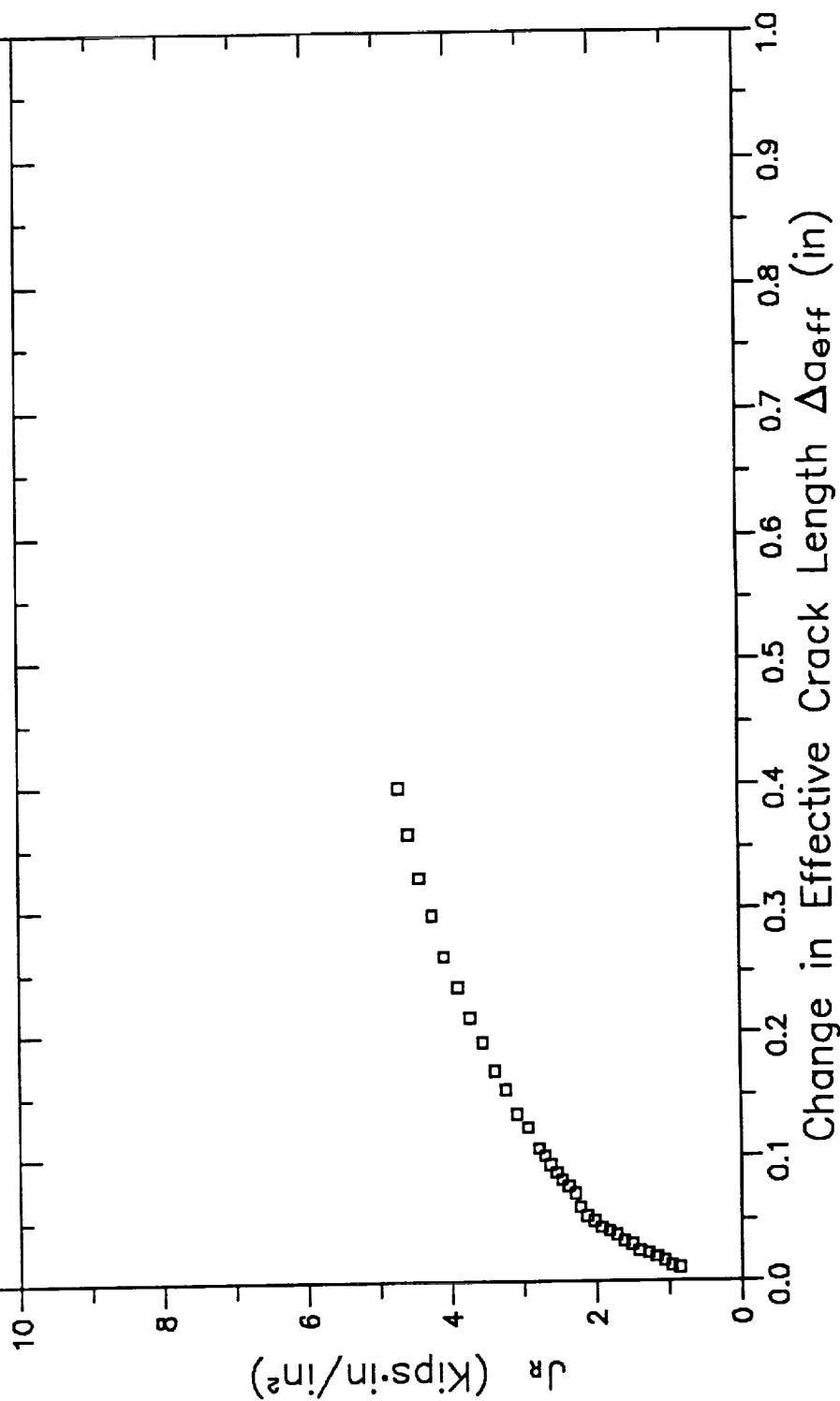


# RESISTANCE CURVE

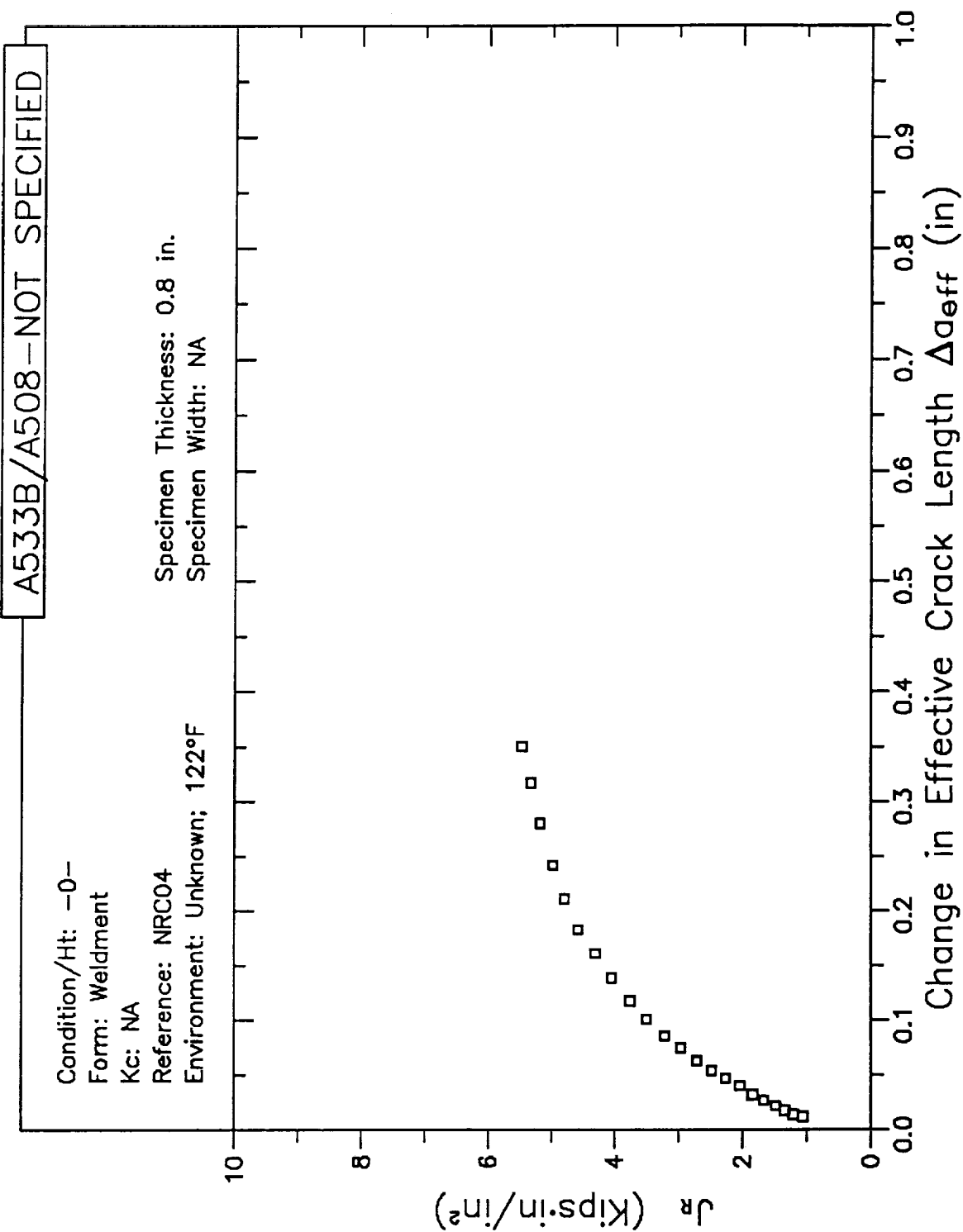
A533B/A508—NOT SPECIFIED

Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 122°F

Specimen Thickness: 0.8 in.  
Specimen Width: NA



# RESISTANCE CURVE

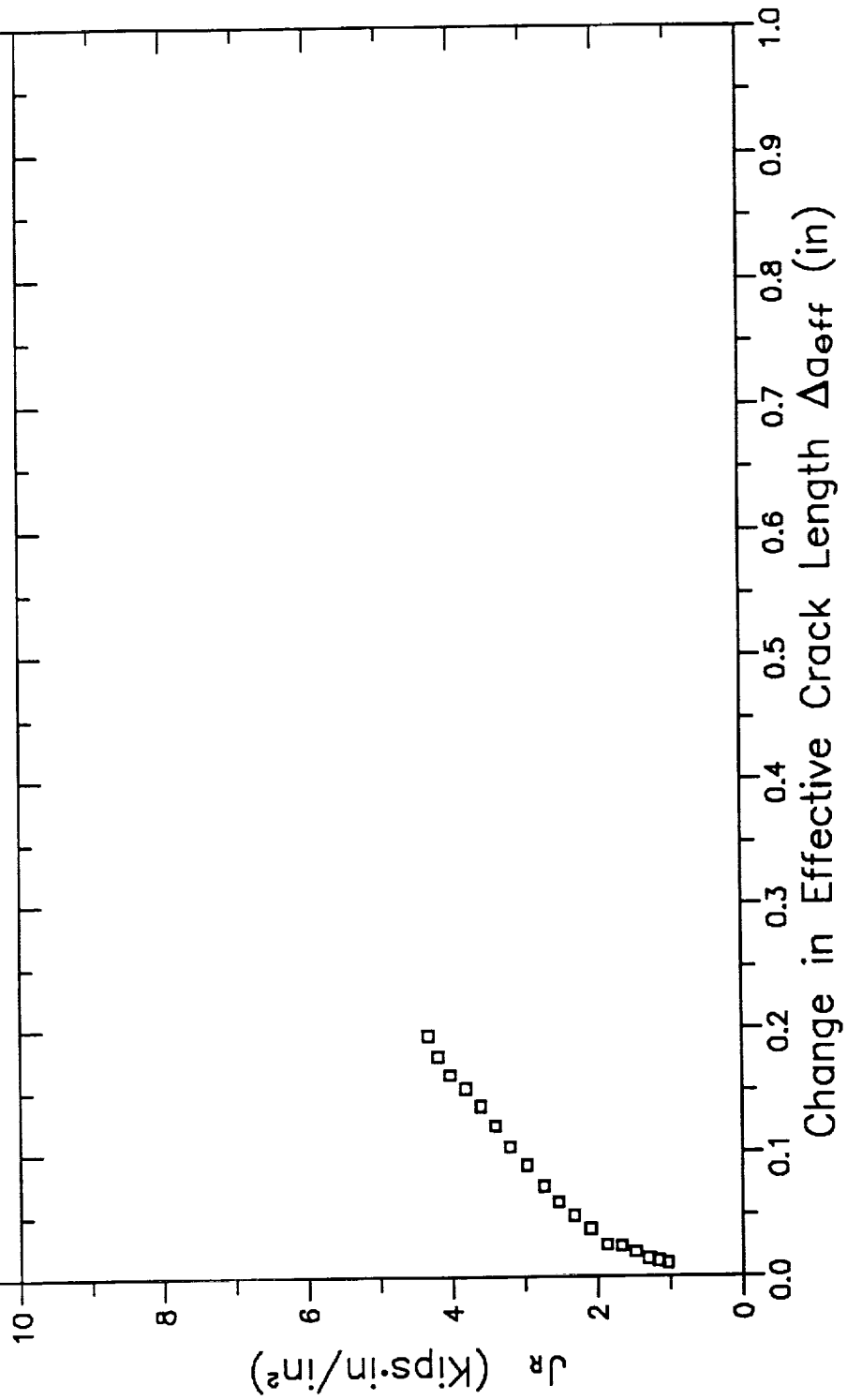


# RESISTANCE CURVE

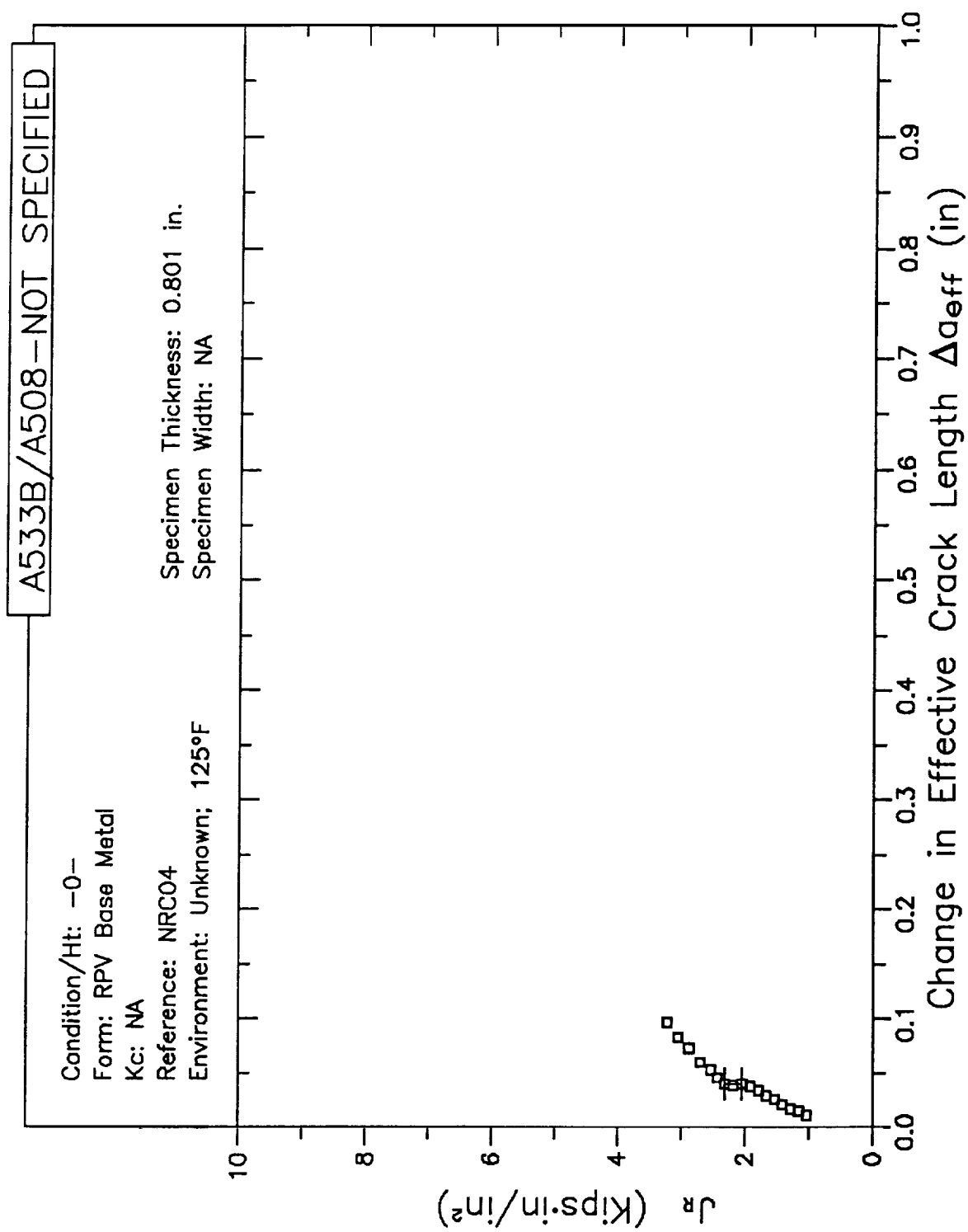
A533B/A508—NOT SPECIFIED

Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 125°F

Specimen Thickness: 0.799 in.  
Specimen Width: NA



# RESISTANCE CURVE

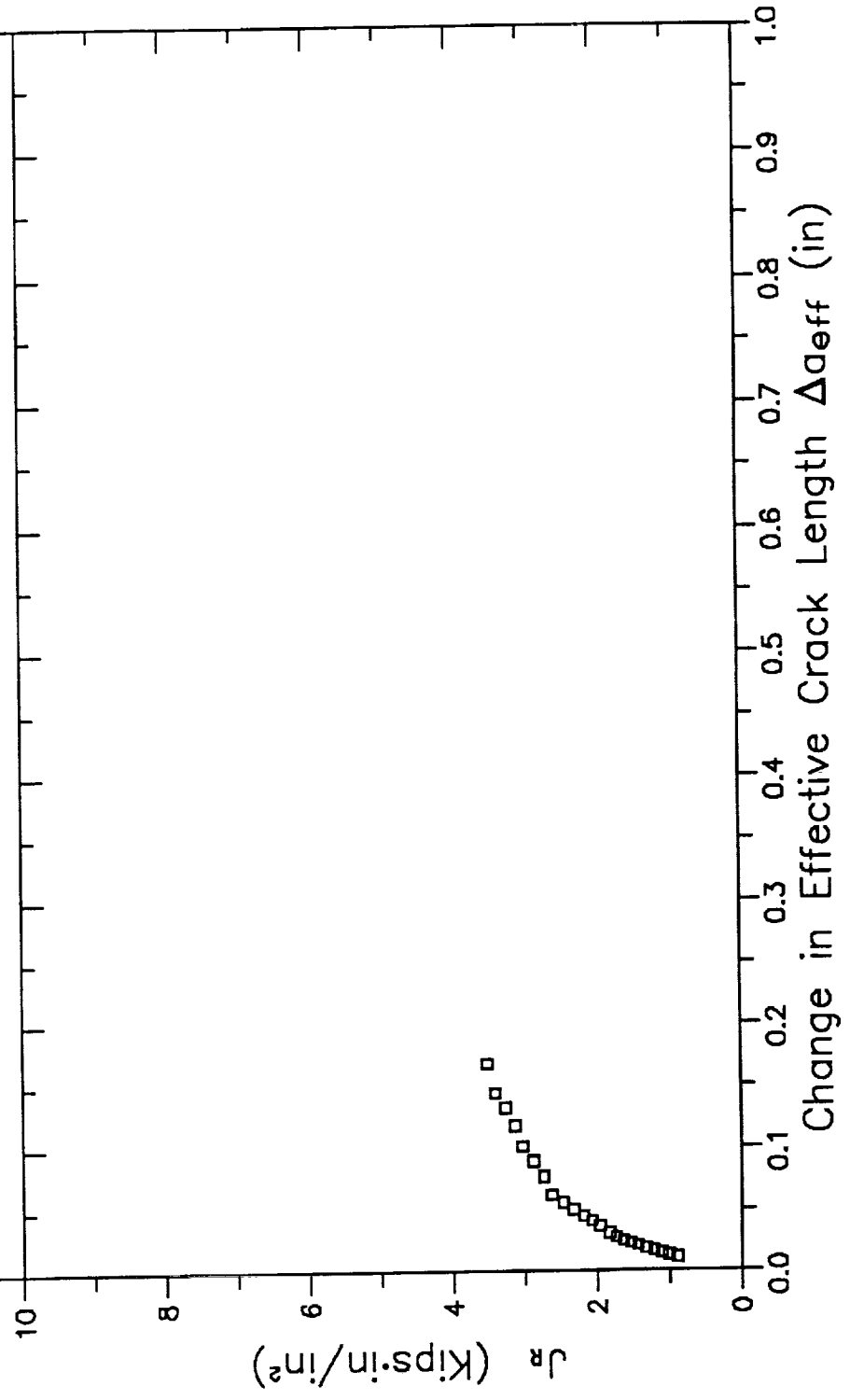


# RESISTANCE CURVE

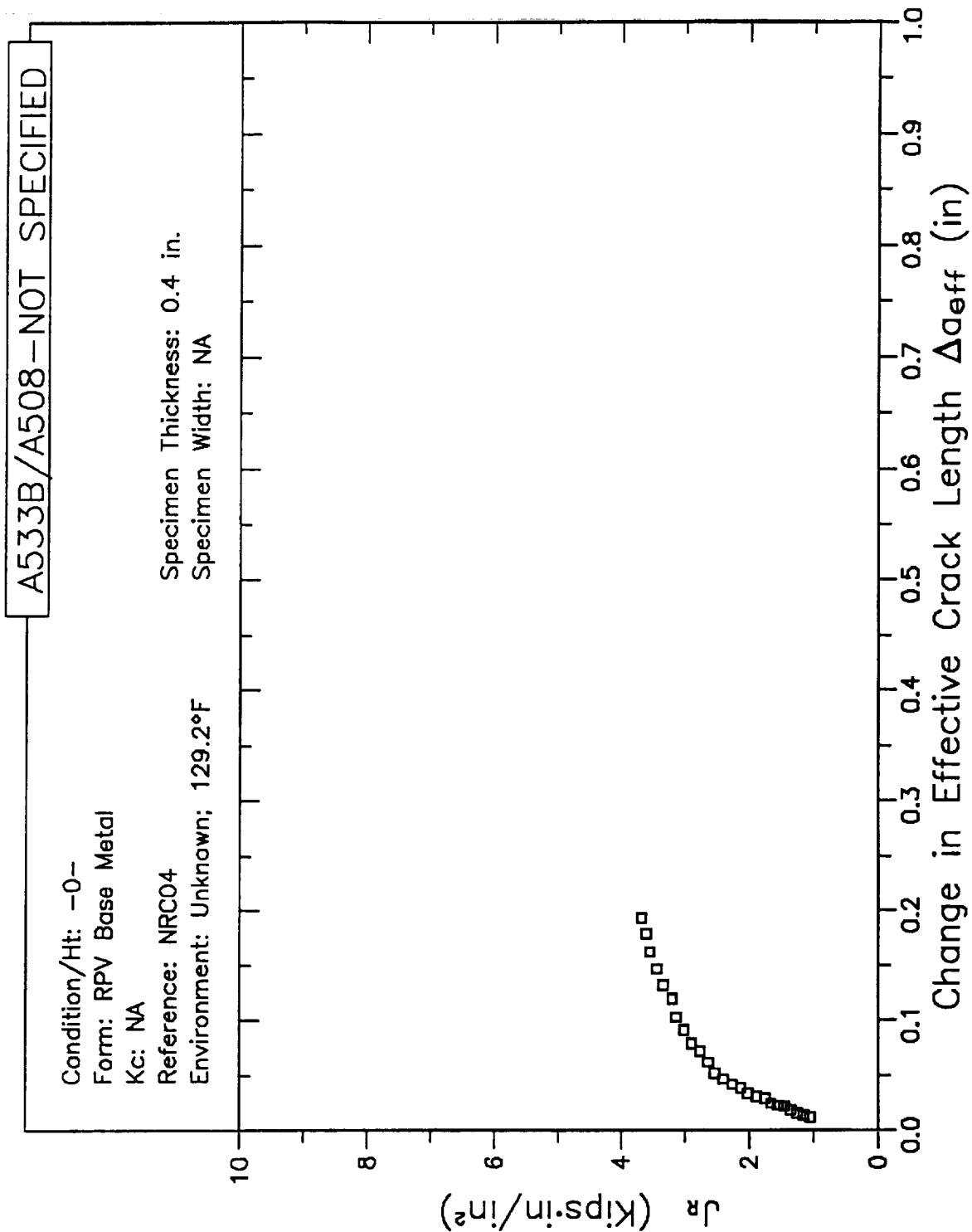
A533B/A508—NOT SPECIFIED

Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 129.2°F

Specimen Thickness: 0.4 in.  
Specimen Width: NA



# RESISTANCE CURVE

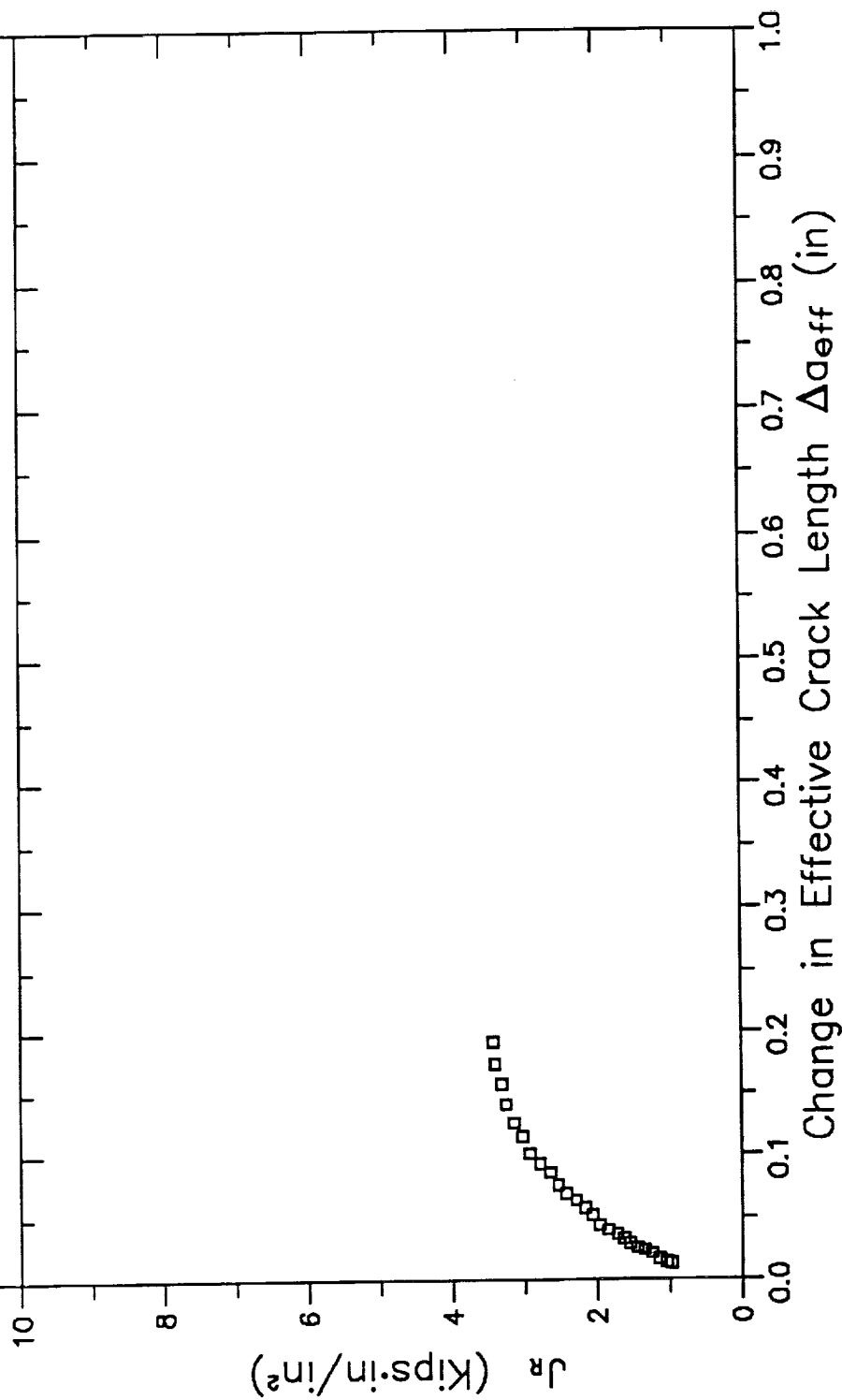


# RESISTANCE CURVE

A533B/A508 - NOT SPECIFIED

Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 129.2°F

Specimen Thickness: 0.4 in.  
Specimen Width: NA



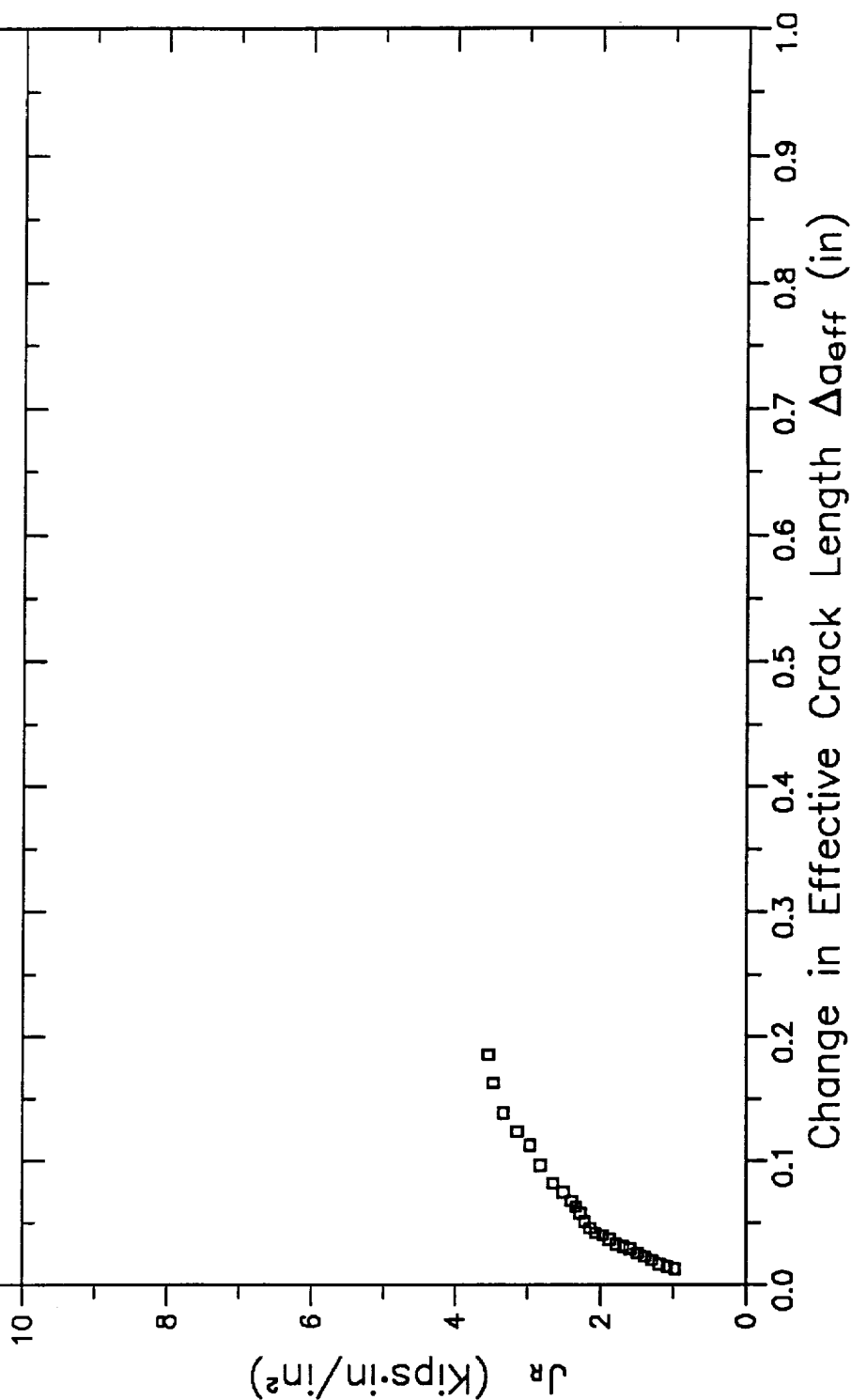


# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 129.2°F

Specimen Thickness: 0.4 in.  
Specimen Width: NA

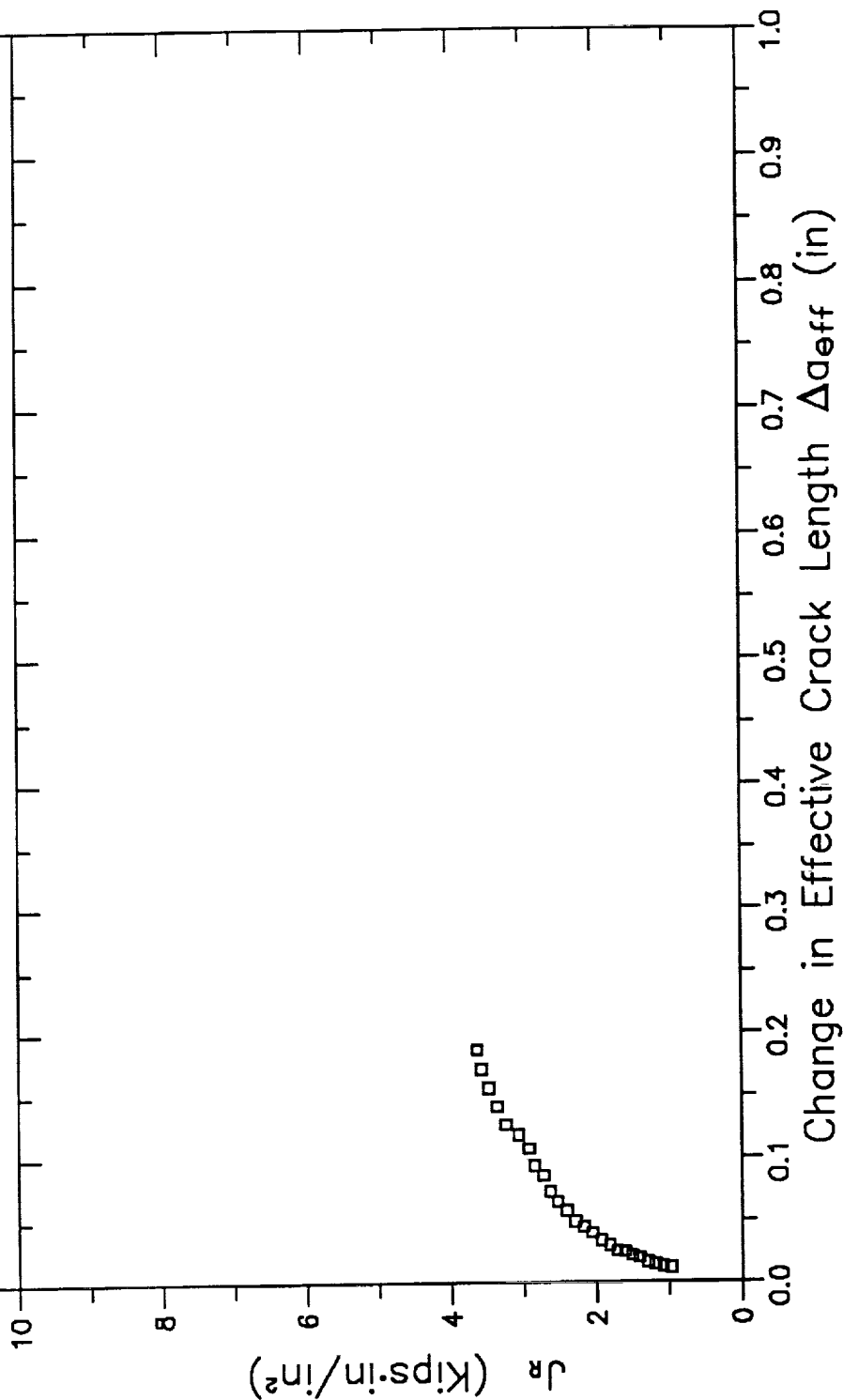


# RESISTANCE CURVE

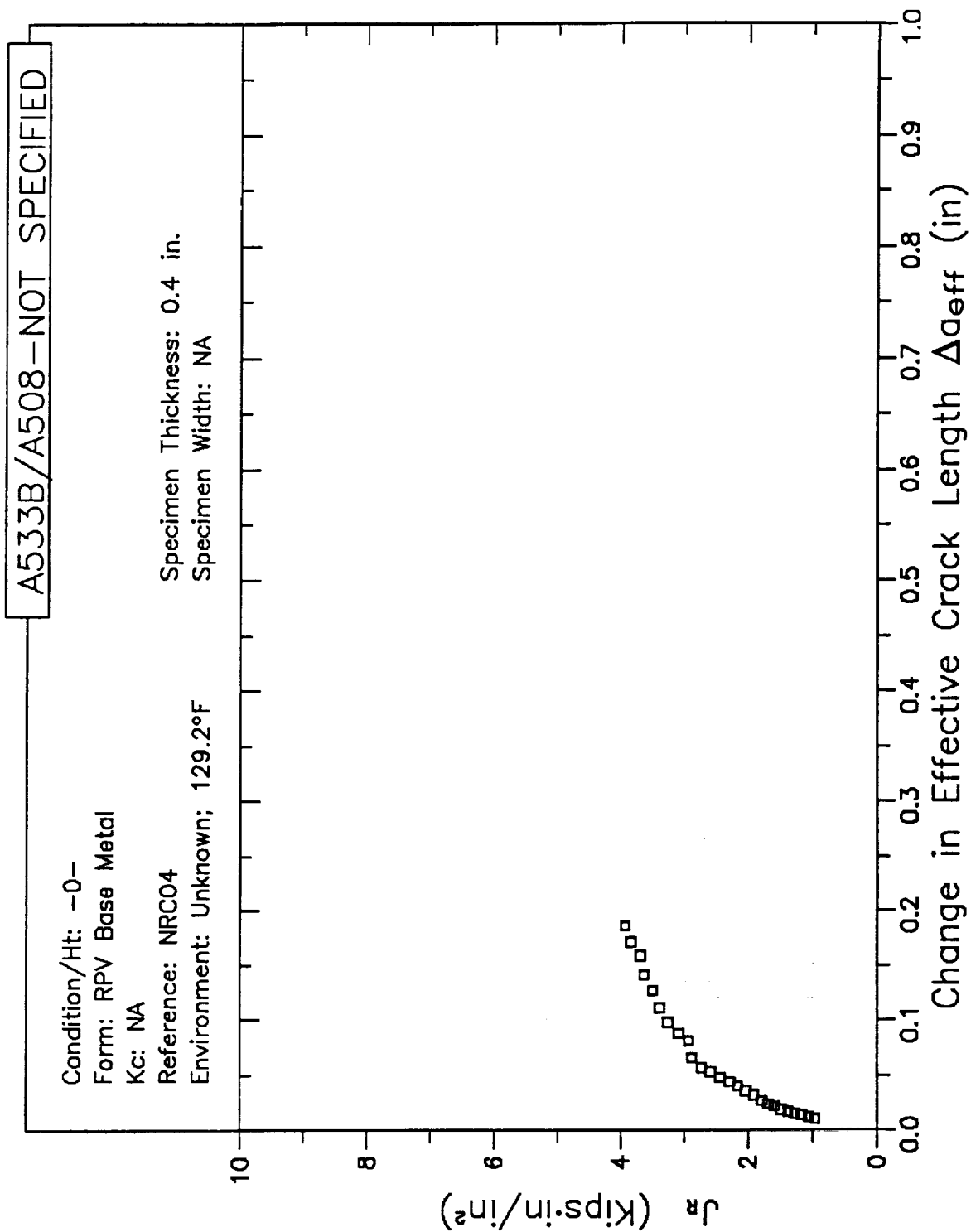
A533B/A508—NOT SPECIFIED

Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 129.2°F

Specimen Thickness: 0.4 in.  
Specimen Width: NA



# RESISTANCE CURVE

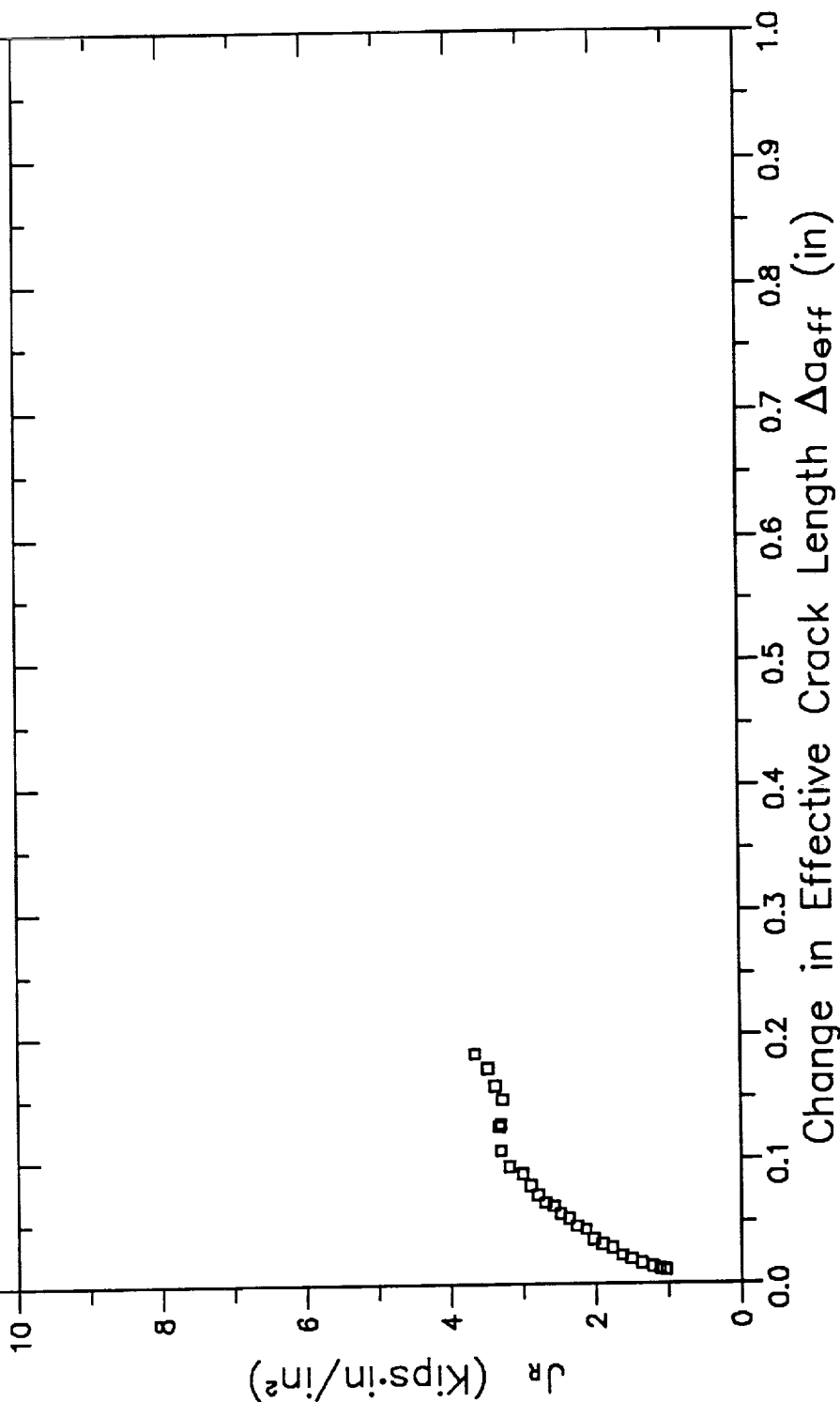


# RESISTANCE CURVE

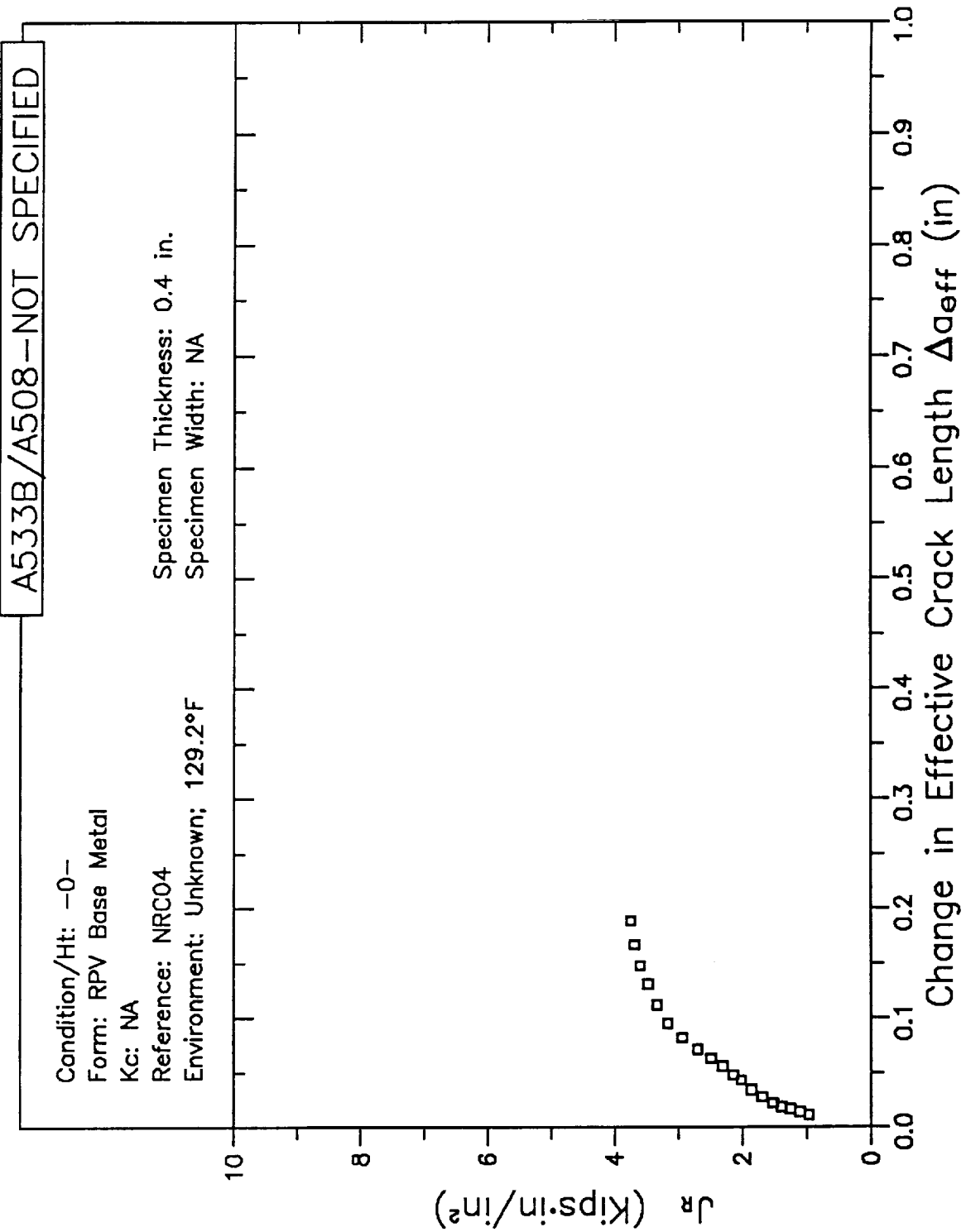
A533B/A508—NOT SPECIFIED

Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 129.2°F

Specimen Thickness: 0.4 in.  
Specimen Width: NA



# RESISTANCE CURVE

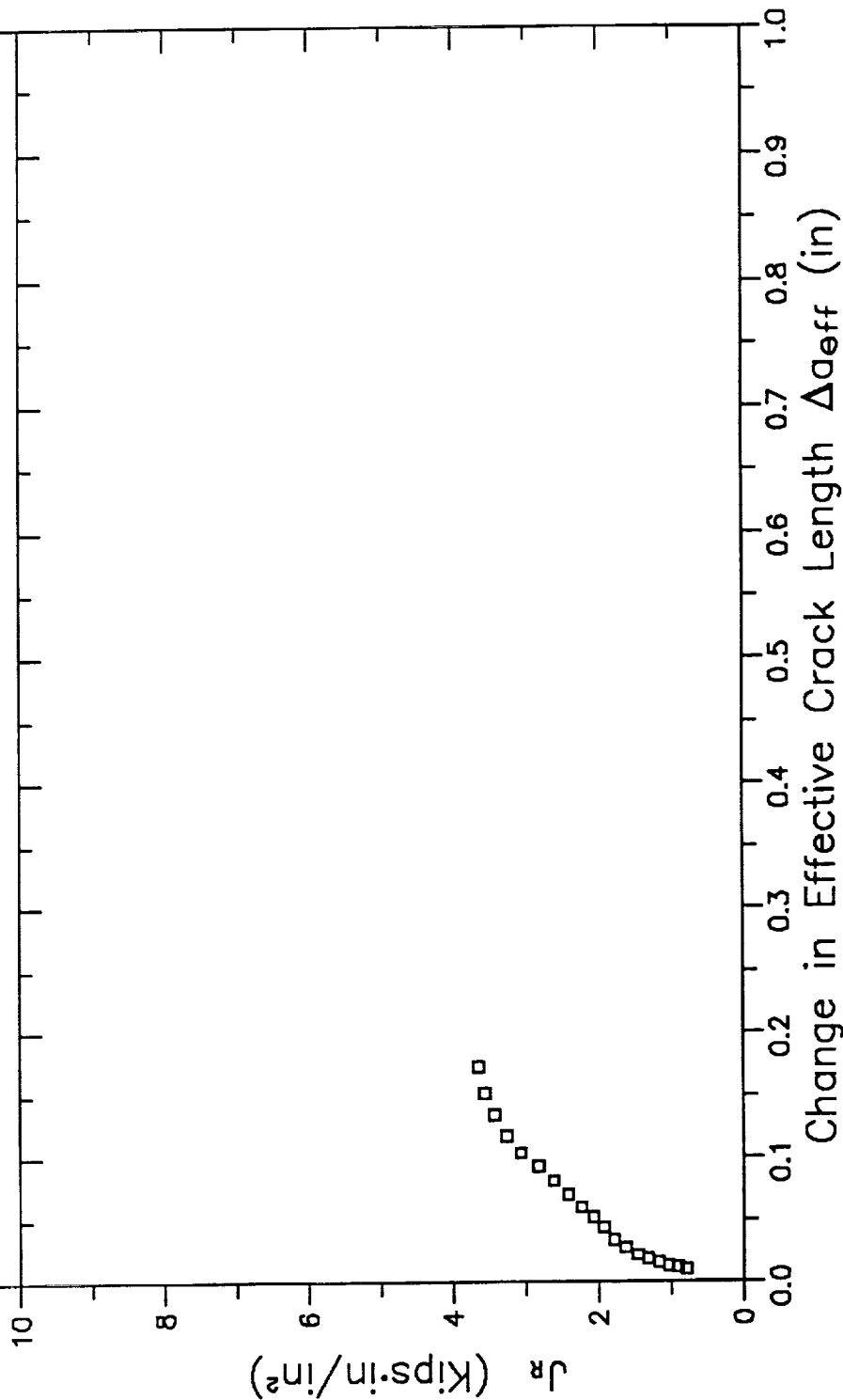


# RESISTANCE CURVE

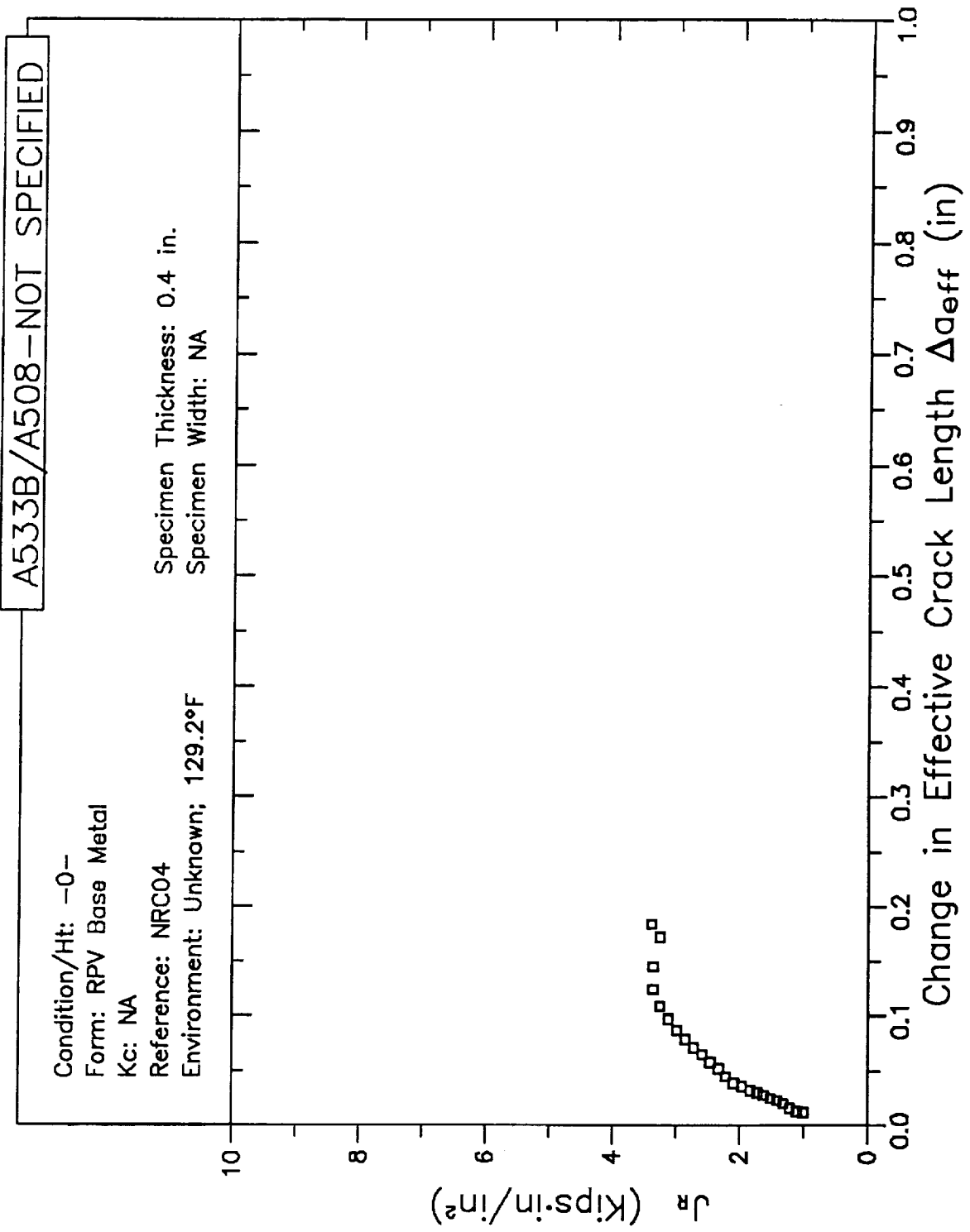
A533B/A508—NOT SPECIFIED

Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 129.2°F

Specimen Thickness: 0.4 in.  
Specimen Width: NA



# RESISTANCE CURVE

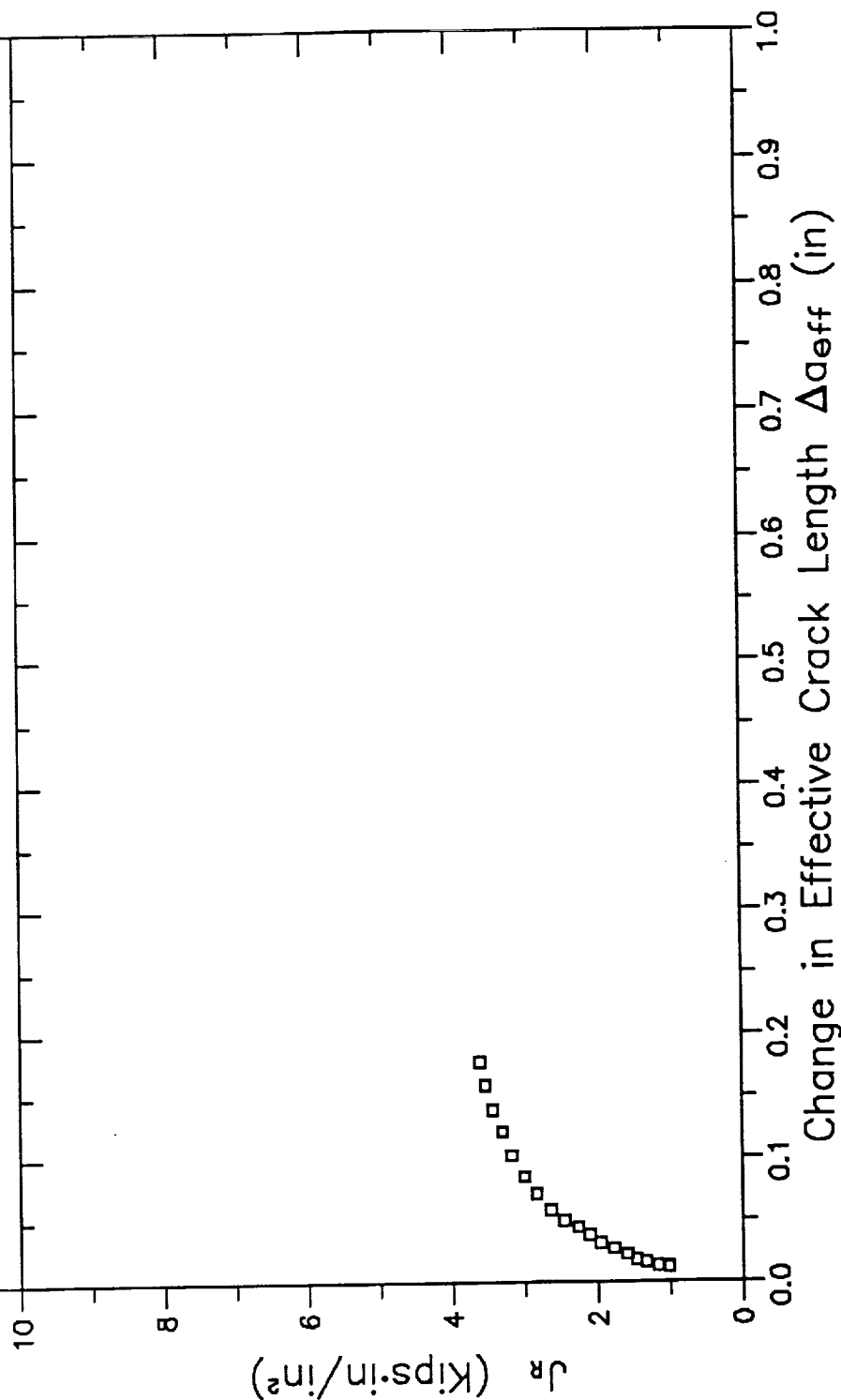


# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

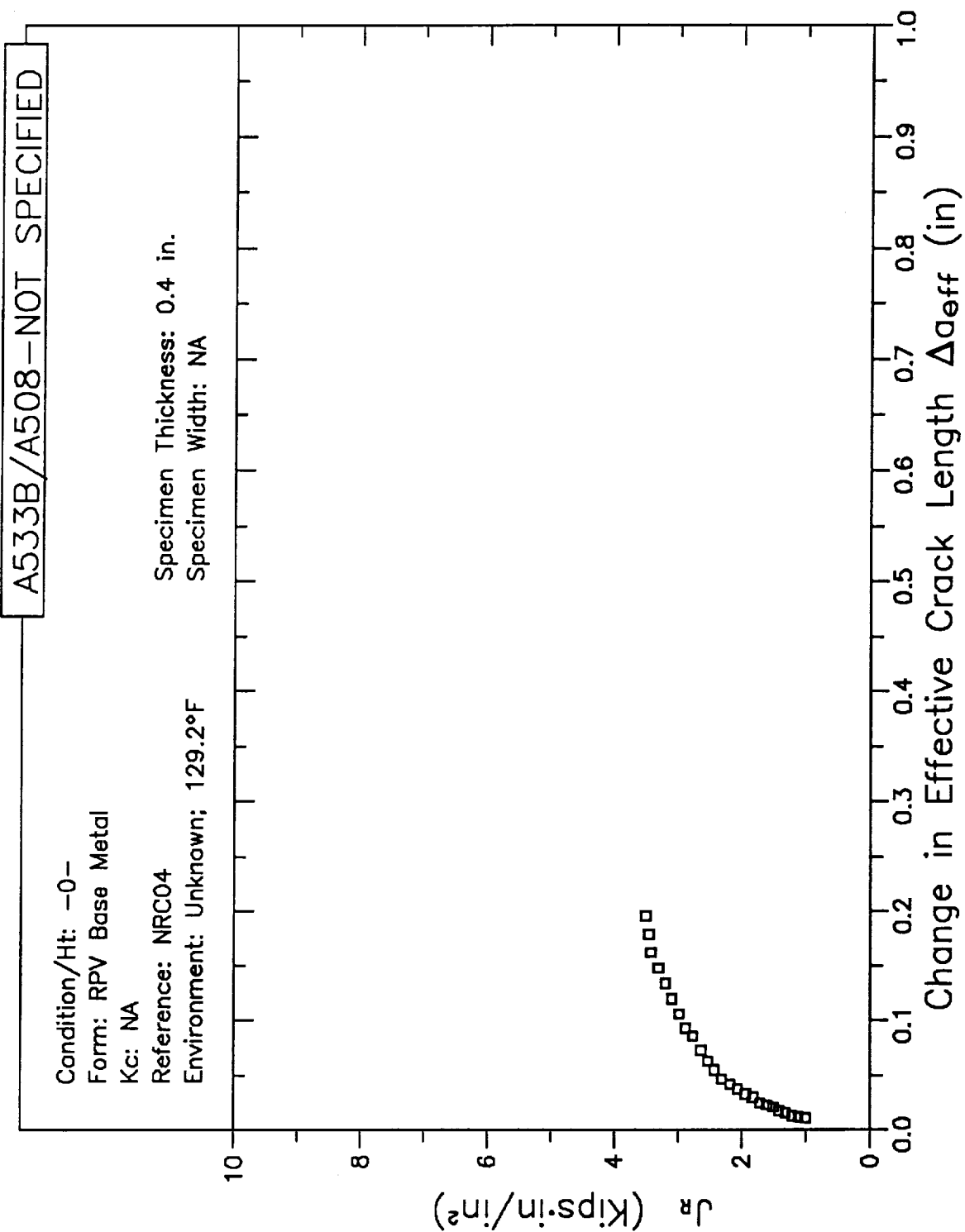
Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 129.2°F

Specimen Thickness: 0.4 in.  
Specimen Width: NA





# RESISTANCE CURVE

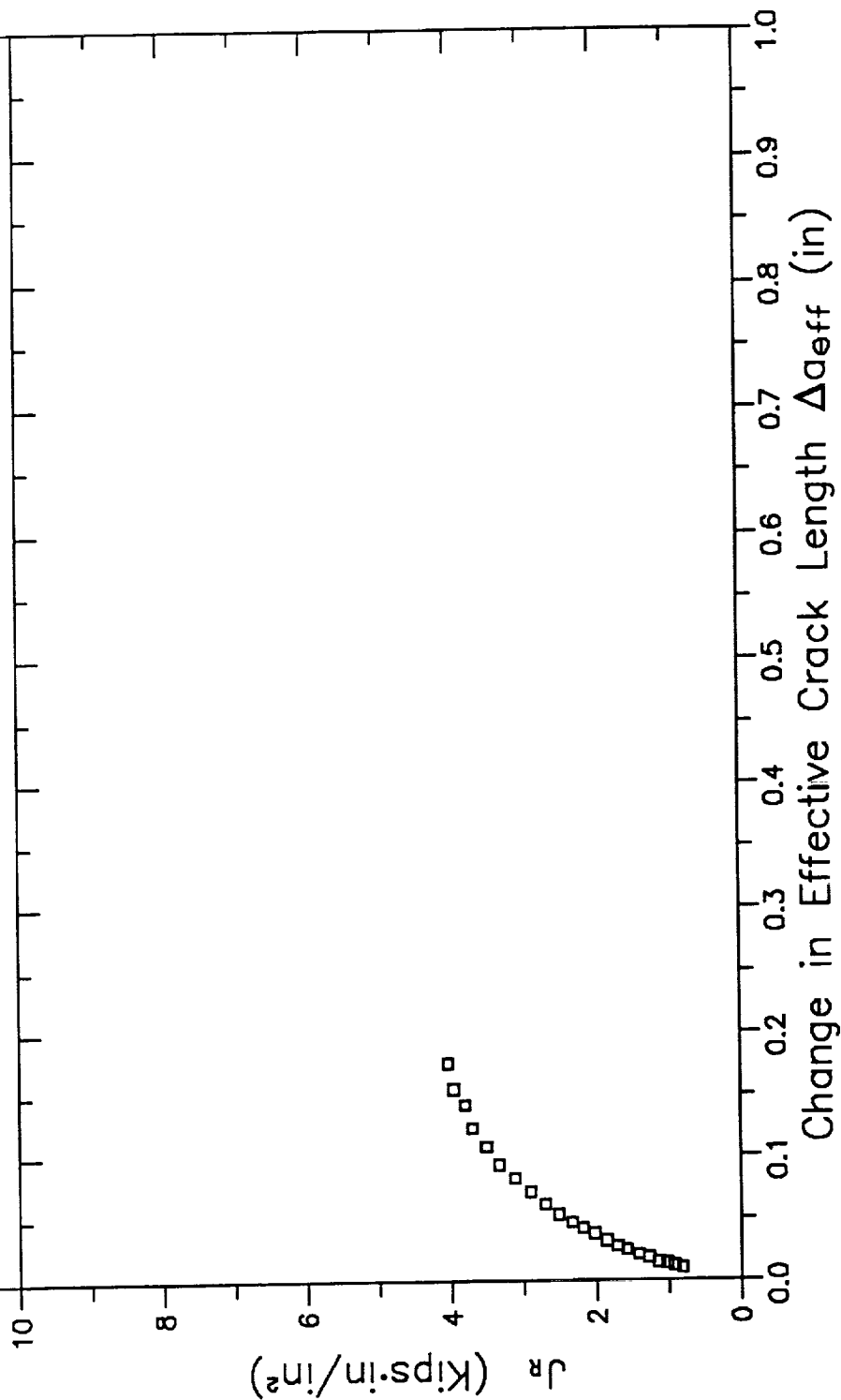


# RESISTANCE CURVE

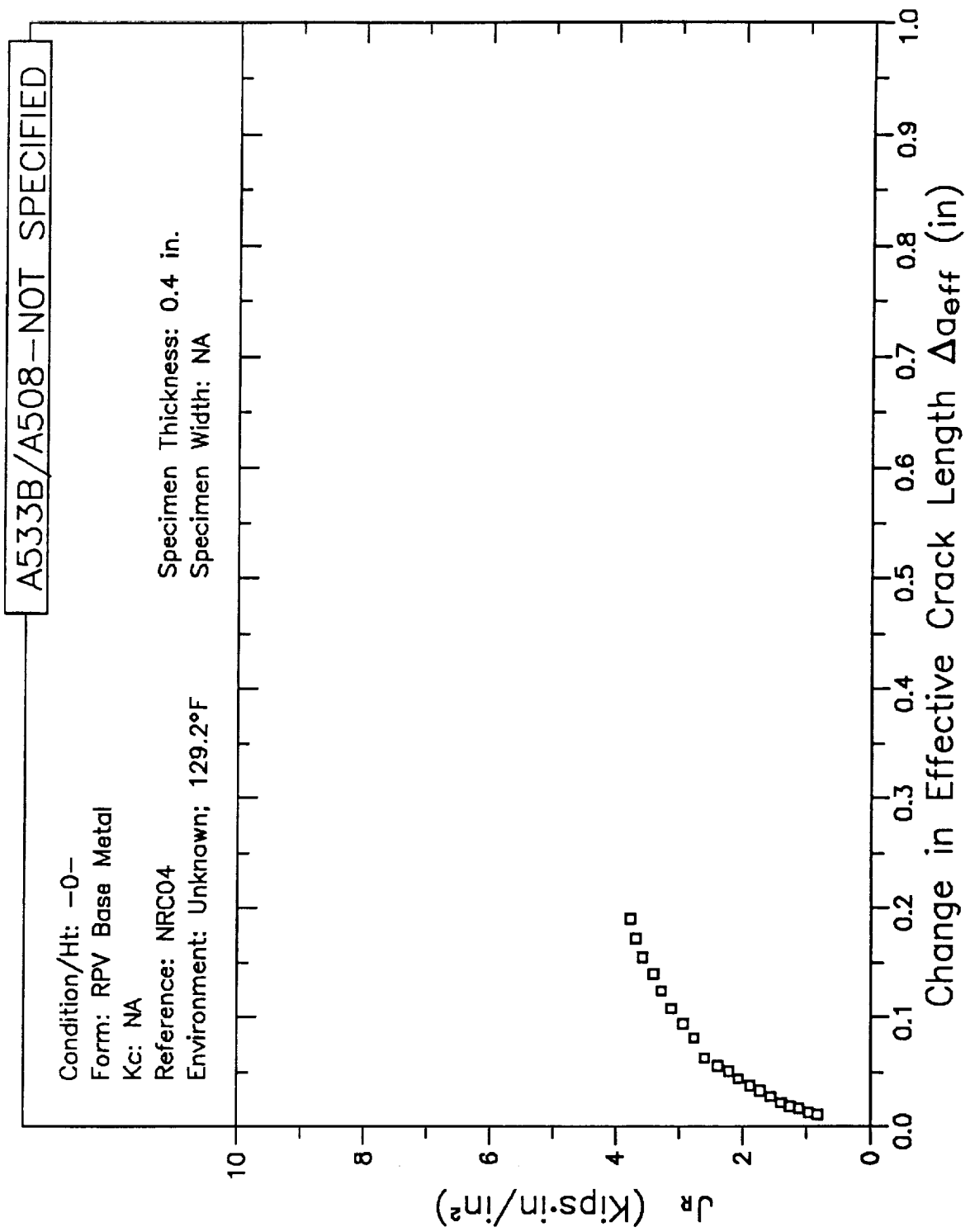
A533B/A508—NOT SPECIFIED

Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 129.2°F

Specimen Thickness: 0.4 in.  
Specimen Width: NA



# RESISTANCE CURVE

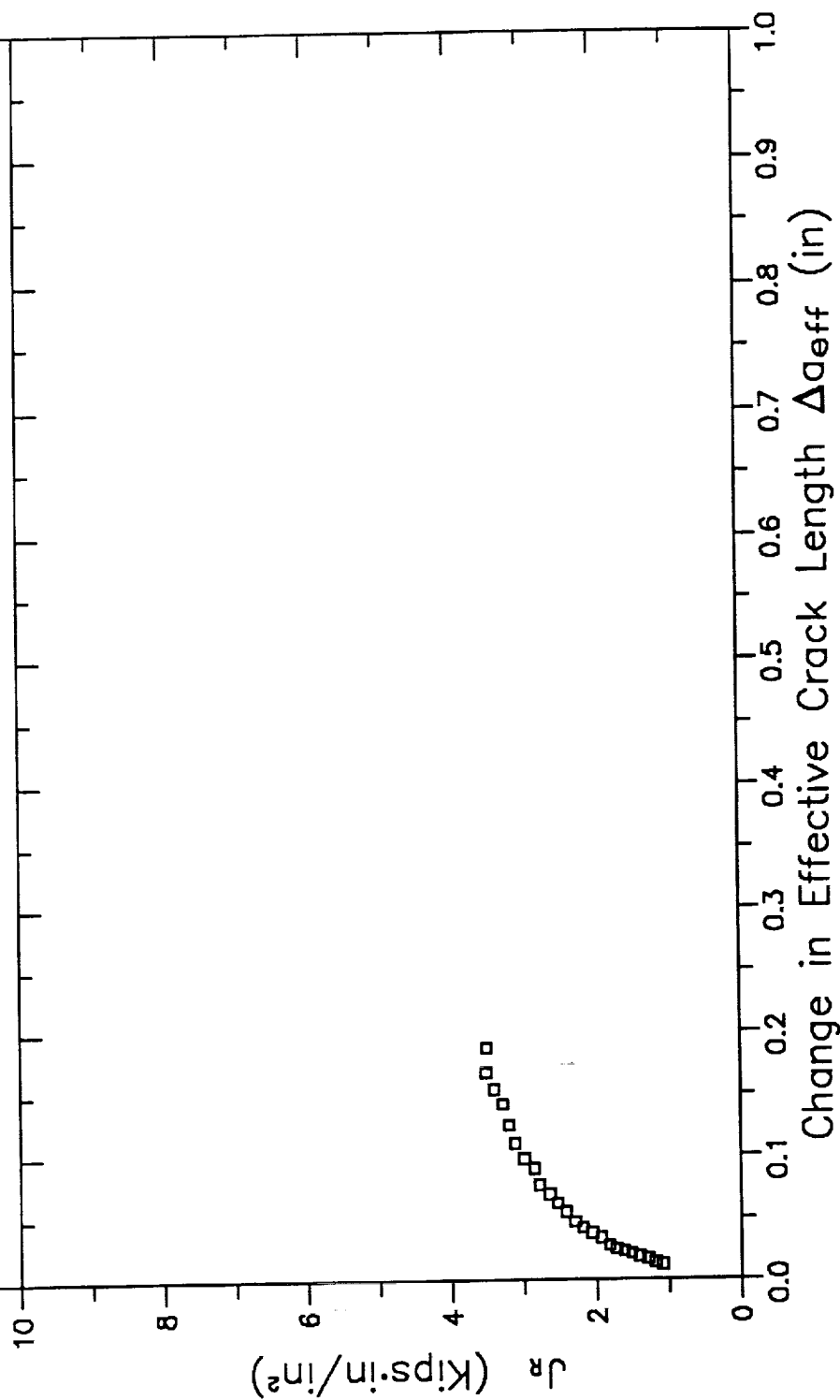


# RESISTANCE CURVE

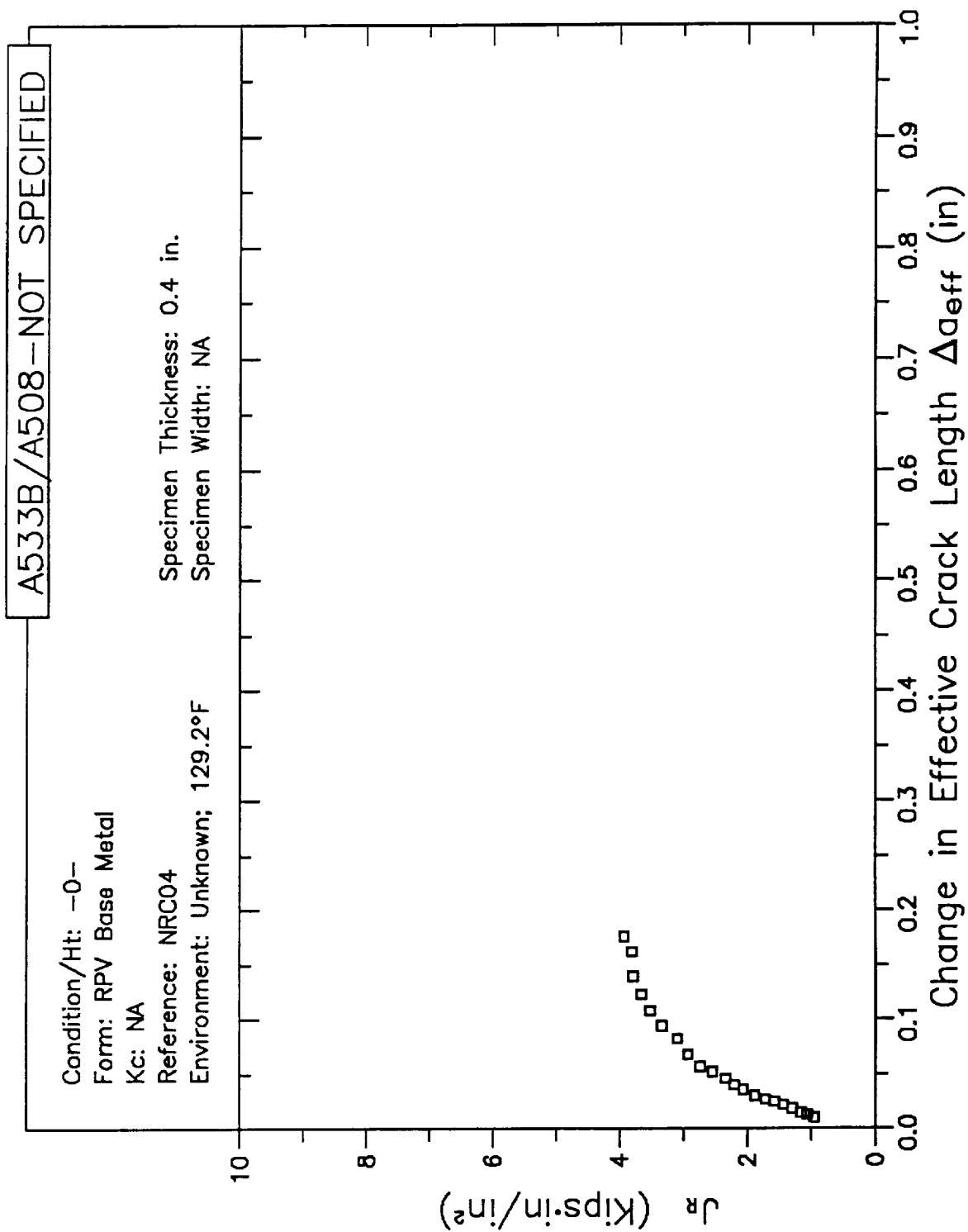
A533B/A508 - NOT SPECIFIED

Condition/Ht: -0-  
 Form: RPV Base Metal  
 Kc: NA  
 Reference: NRC04  
 Environment: Unknown; 129.2°F

Specimen Thickness: 0.4 in.  
 Specimen Width: NA



# RESISTANCE CURVE



# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

Condition/Ht: -0-

Form: RPV Base Metal

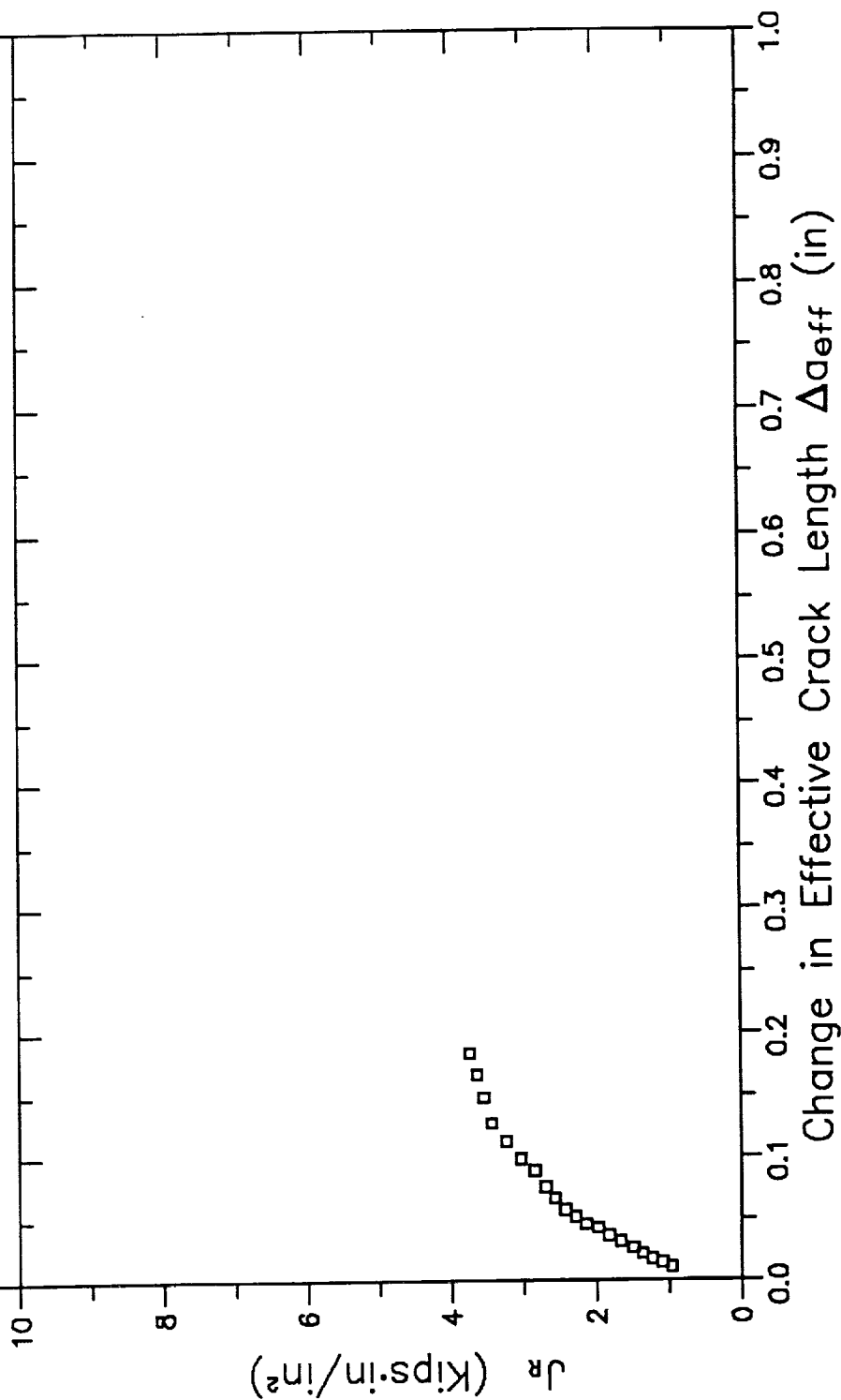
Kc: NA

Reference: NRC04

Environment: Unknown; 129.2°F

Specimen Thickness: 0.4 in.

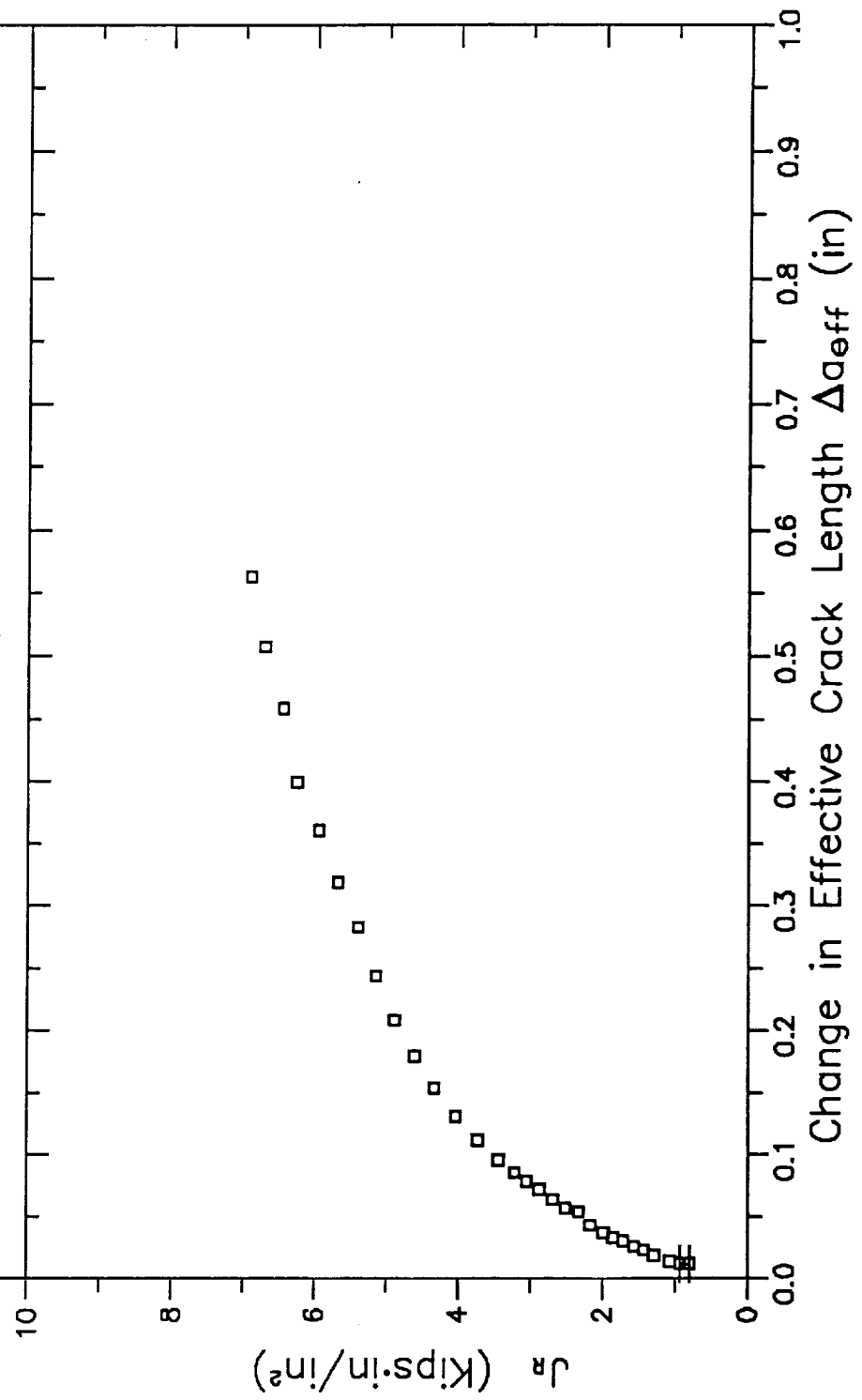
Specimen Width: NA



# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 129.2°F  
Specimen Thickness: 1.28 in.  
Specimen Width: NA

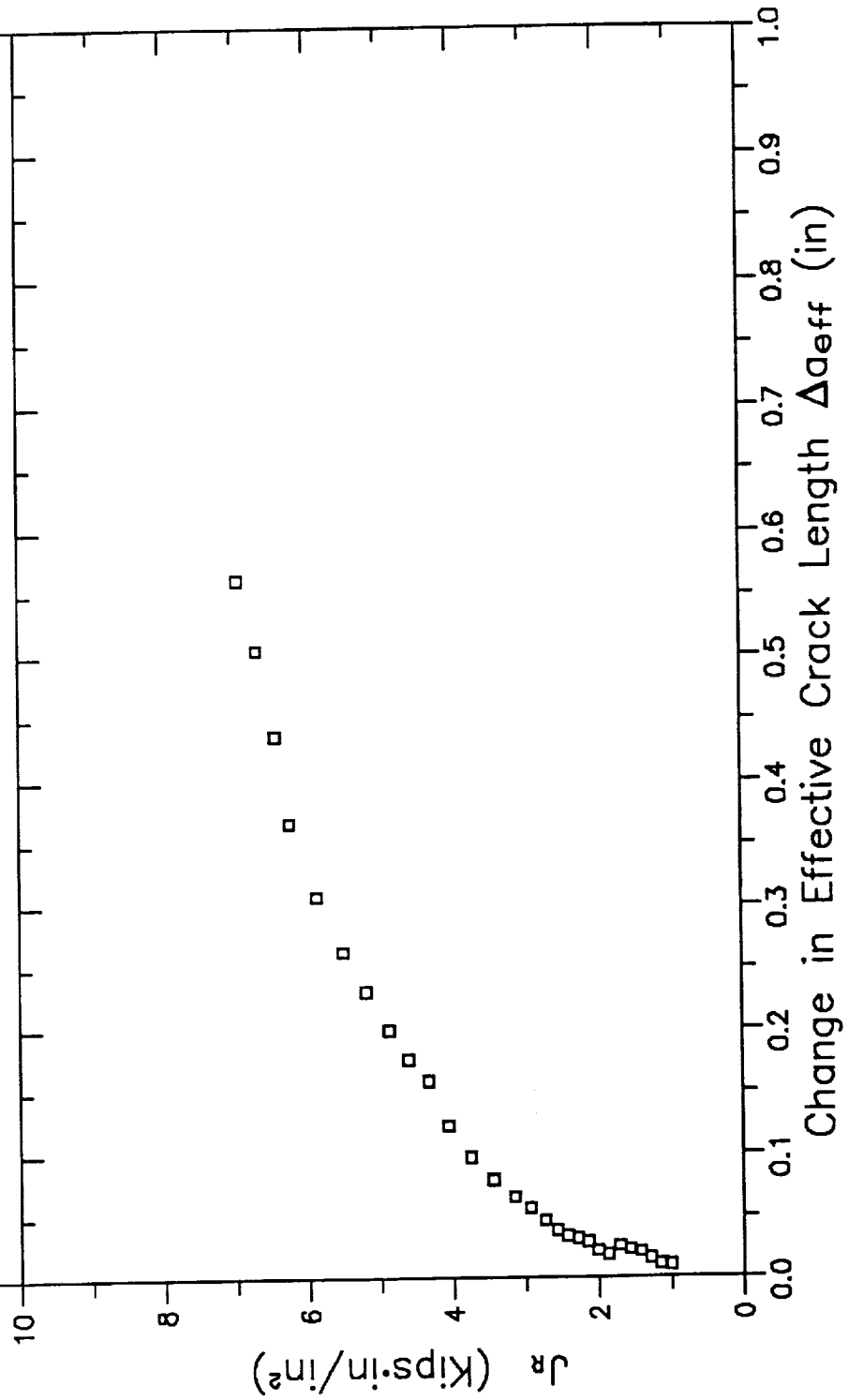


# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 129.2°F

Specimen Thickness: 1.28 in.  
Specimen Width: NA





# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

Condition/Ht: -0-

Form: RPV Base Metal

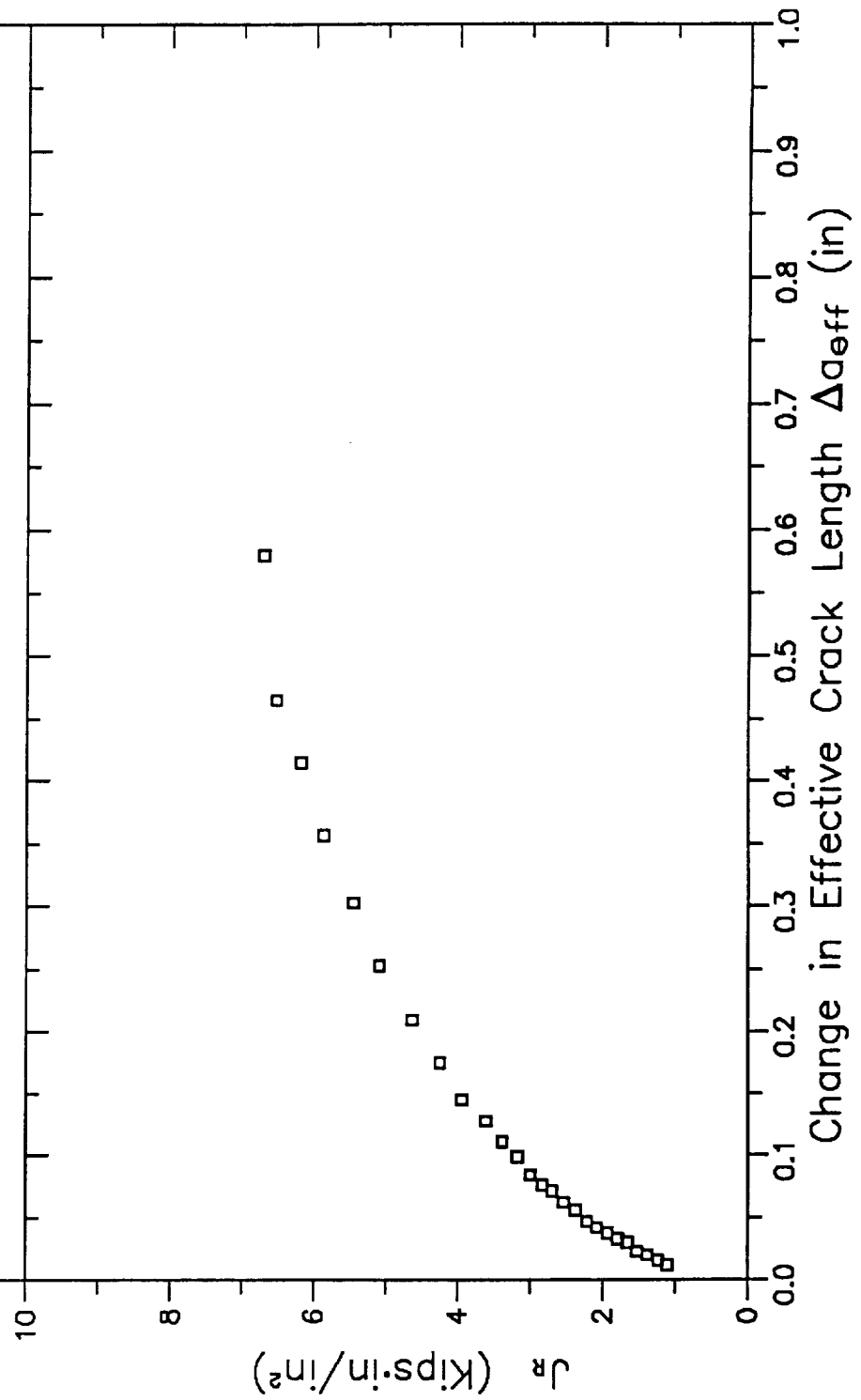
Kc: NA

Reference: NRC04

Environment: Unknown; 129.2°F

Specimen Thickness: 1.28 in.

Specimen Width: NA

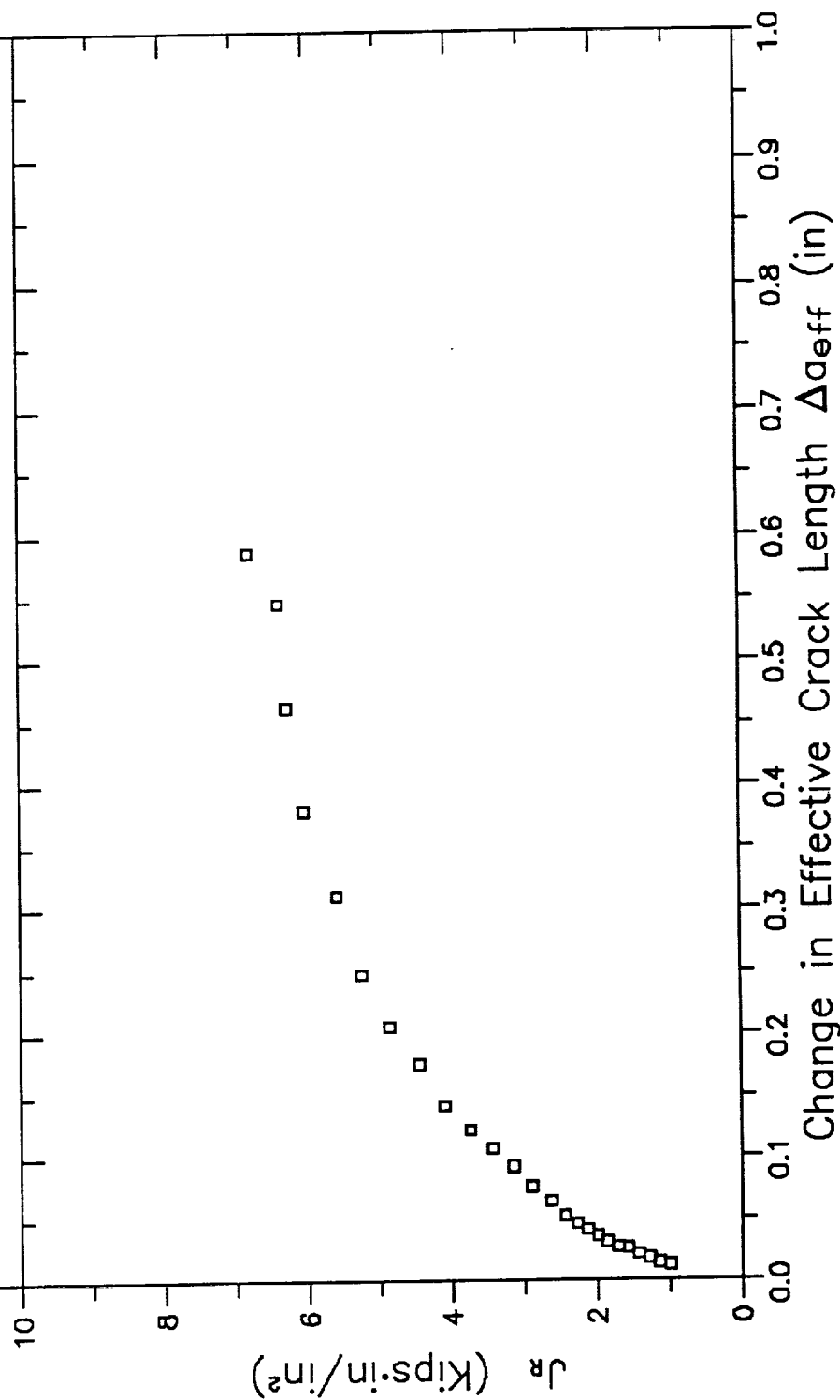


# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

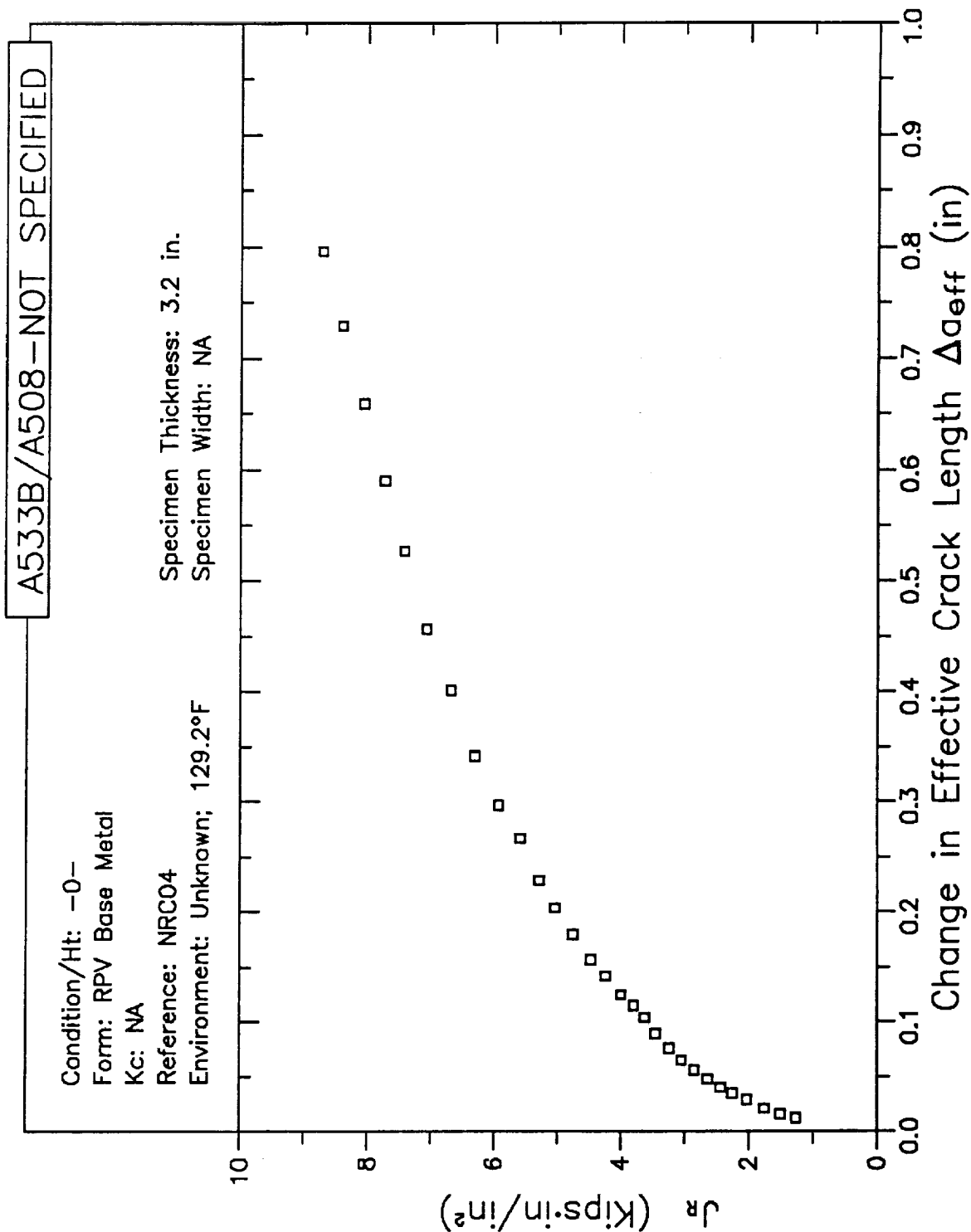
Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA

Reference: NRC04  
Environment: Unknown; 129.2°F  
Specimen Thickness: 1.28 in.  
Specimen Width: NA



B3-66

# RESISTANCE CURVE

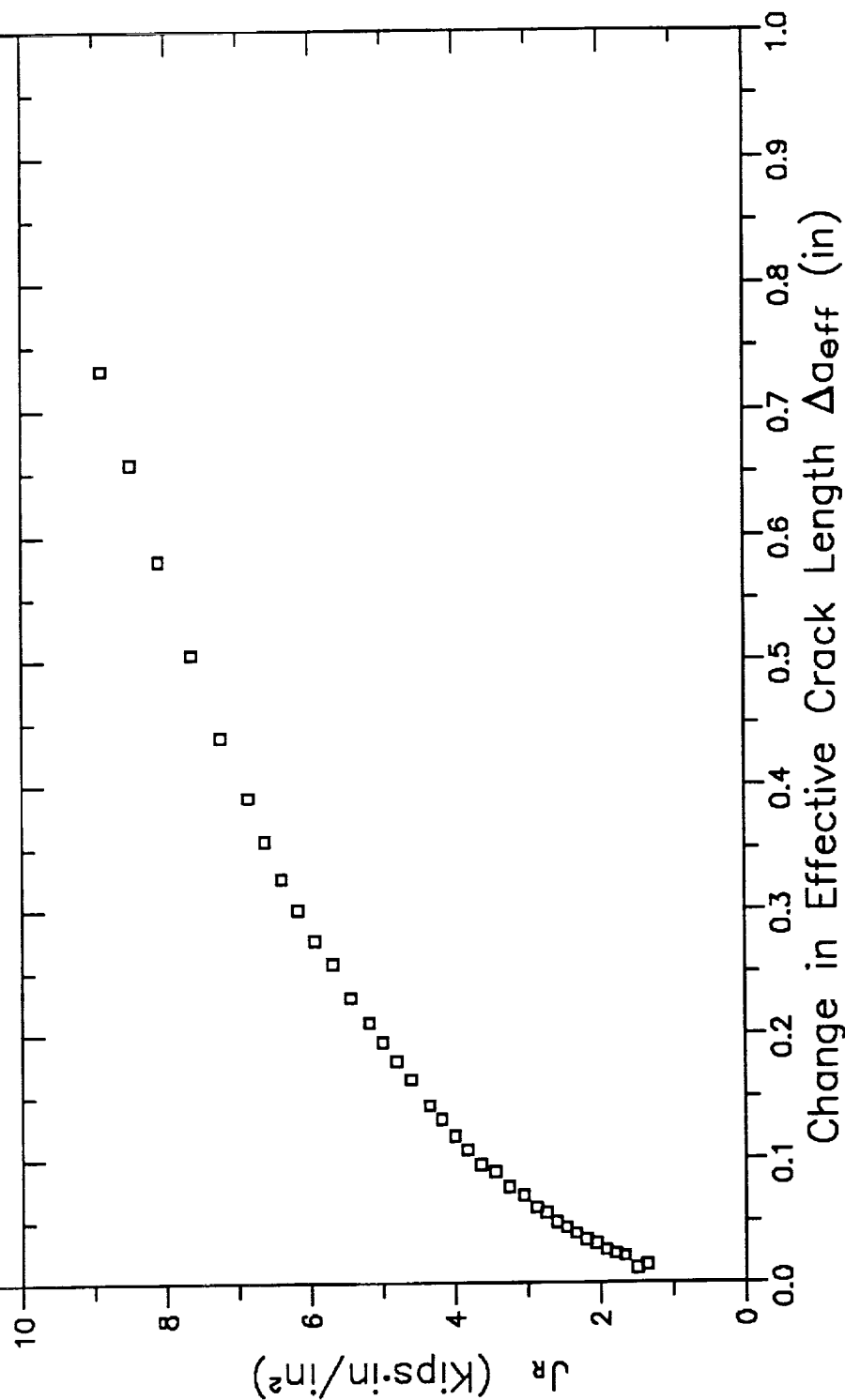


# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

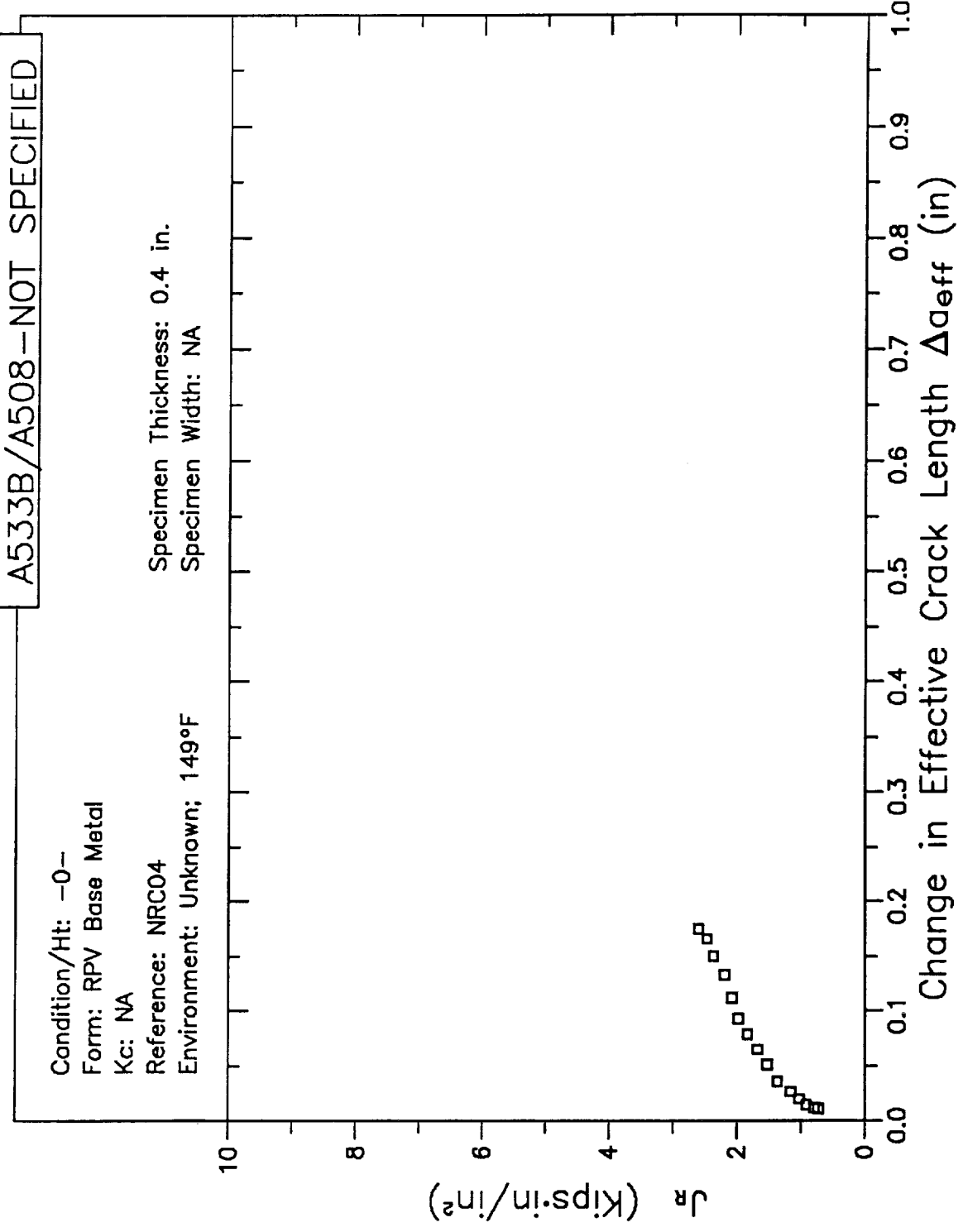
Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 129.2°F

Specimen Thickness: 3.2 in.  
Specimen Width: NA



B3-68

# RESISTANCE CURVE

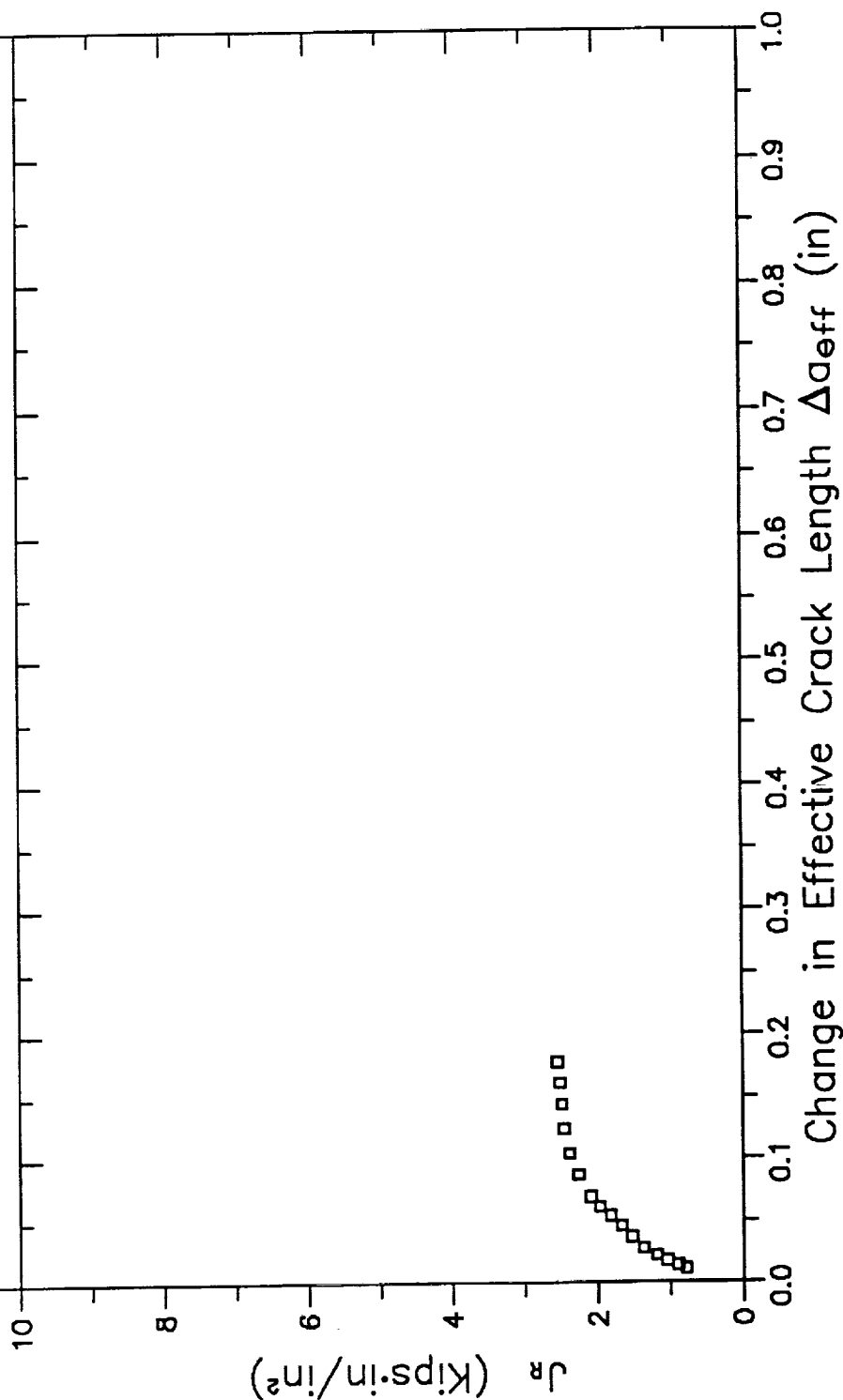


# RESISTANCE CURVE

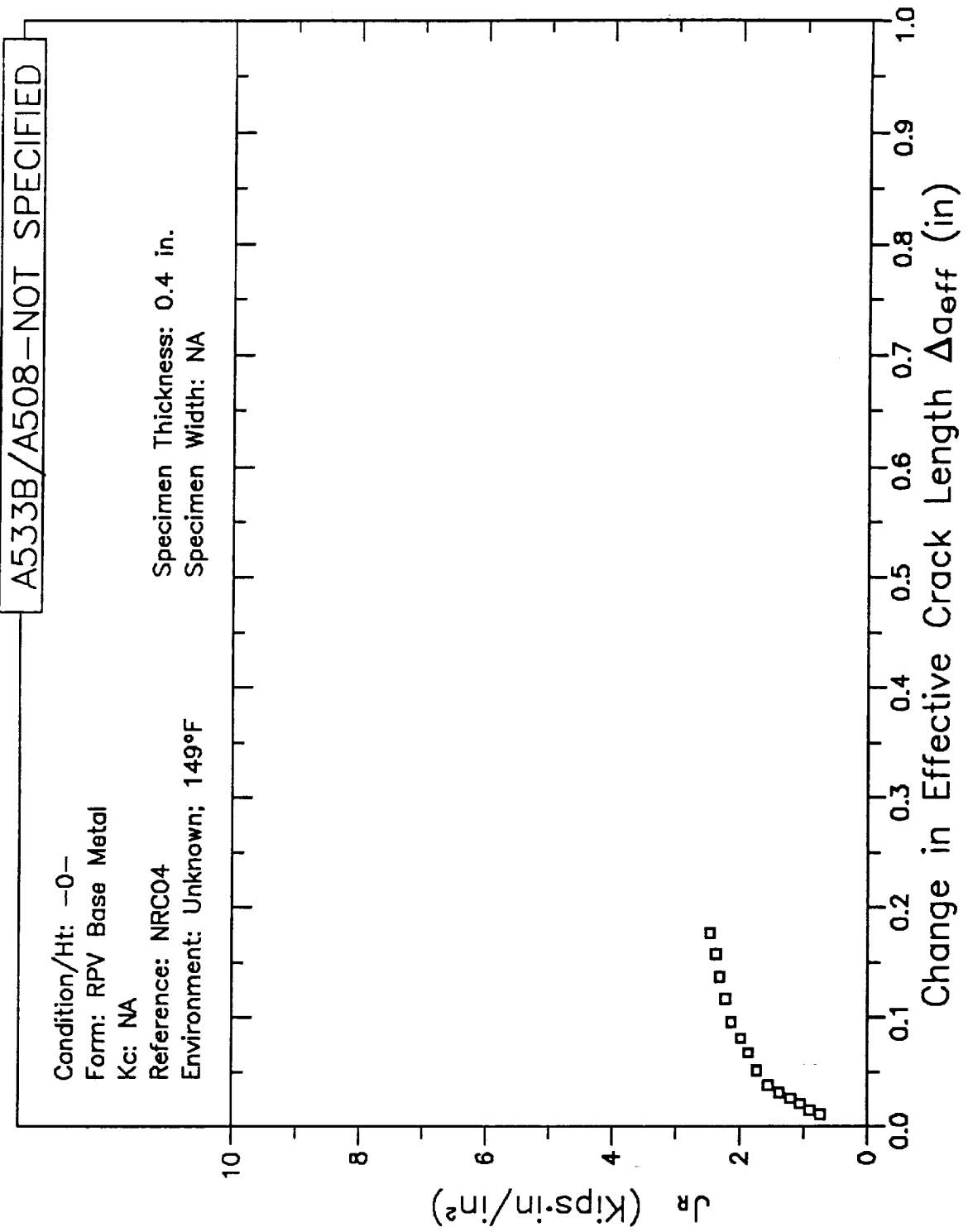
A533B/A508—NOT SPECIFIED

Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 149°F

Specimen Thickness: 0.4 in.  
Specimen Width: NA



# RESISTANCE CURVE

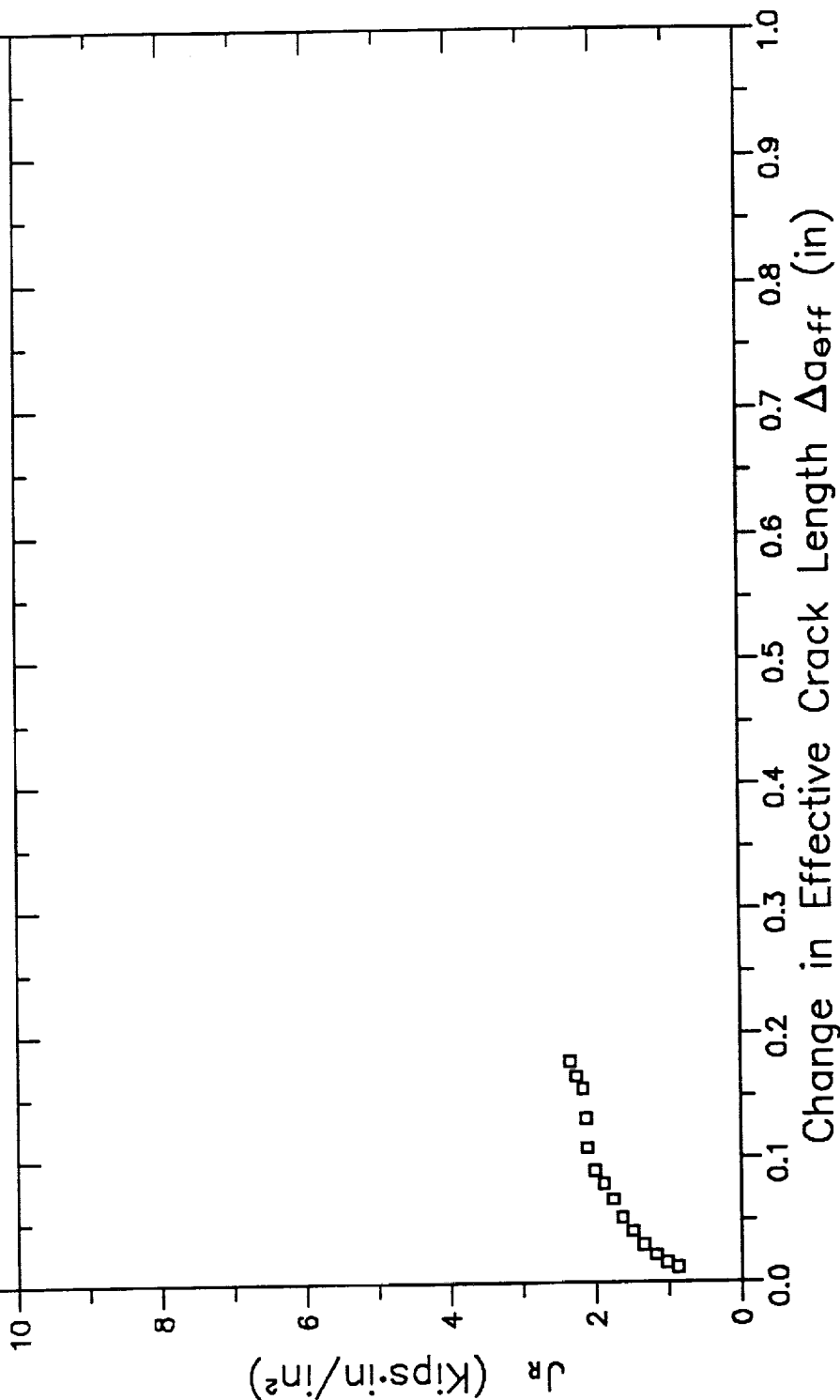


# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

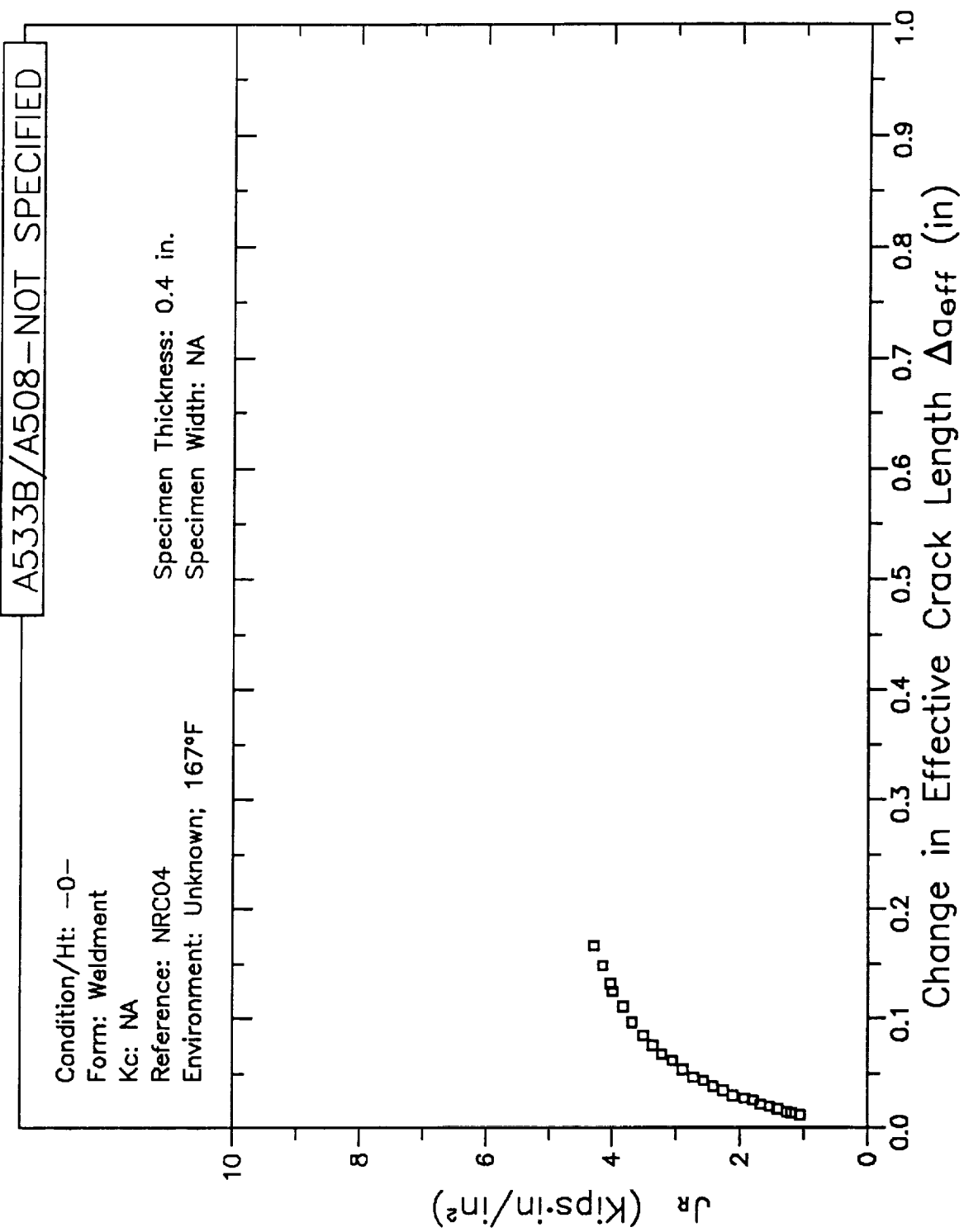
Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 149°F

Specimen Thickness: 0.4 in.  
Specimen Width: NA





# RESISTANCE CURVE

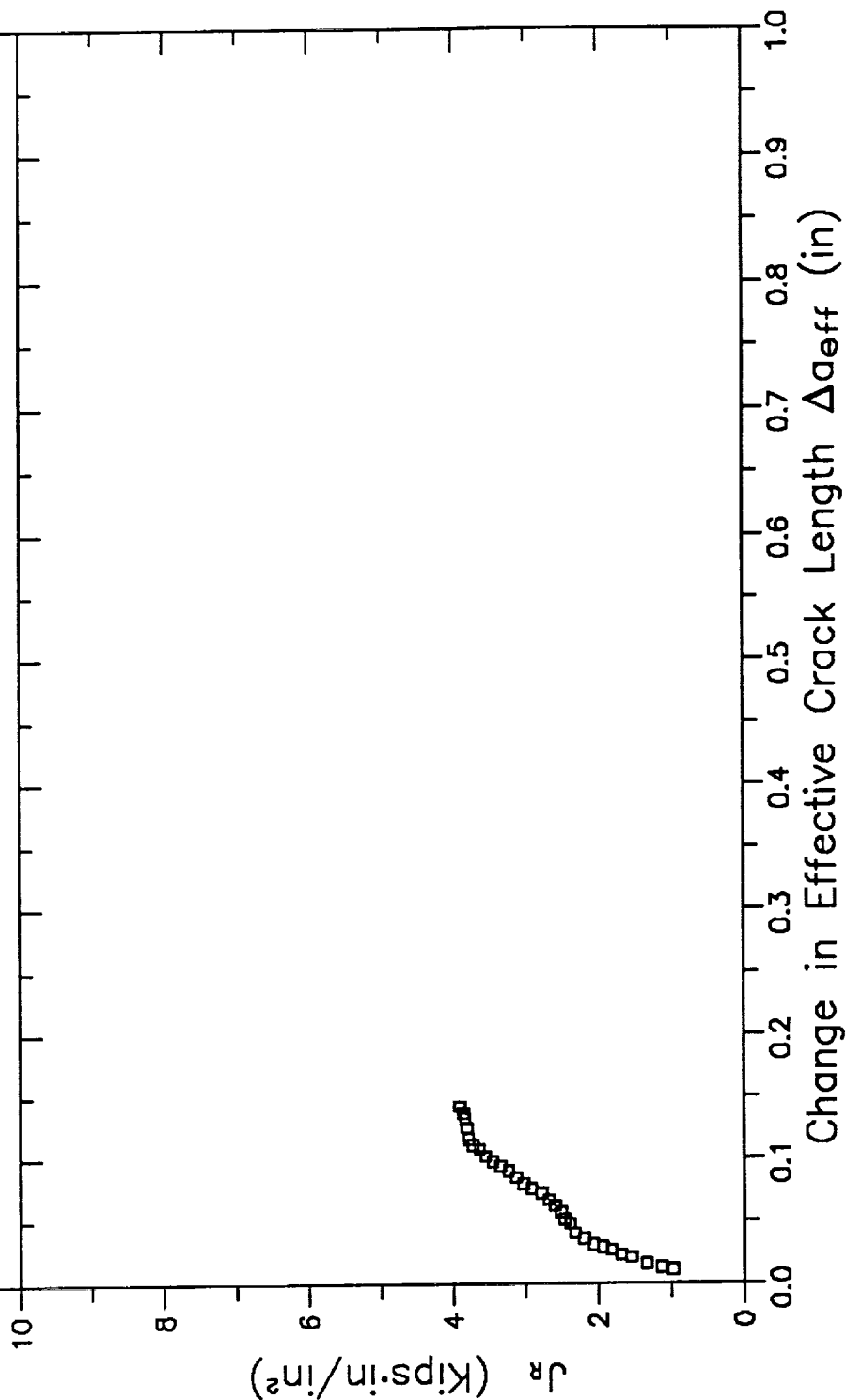


# RESISTANCE CURVE

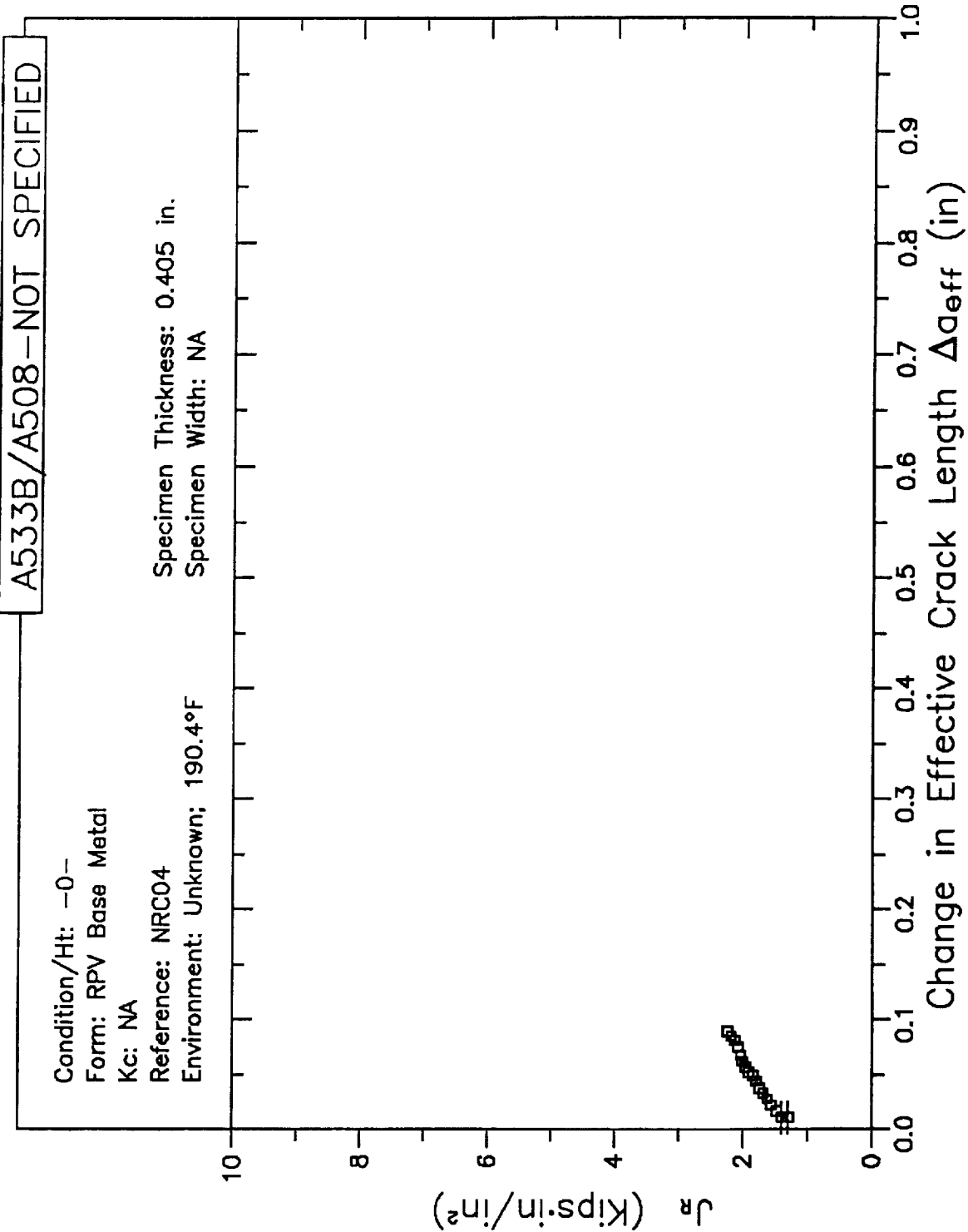
A533B/A508—NOT SPECIFIED

Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 190.4°F

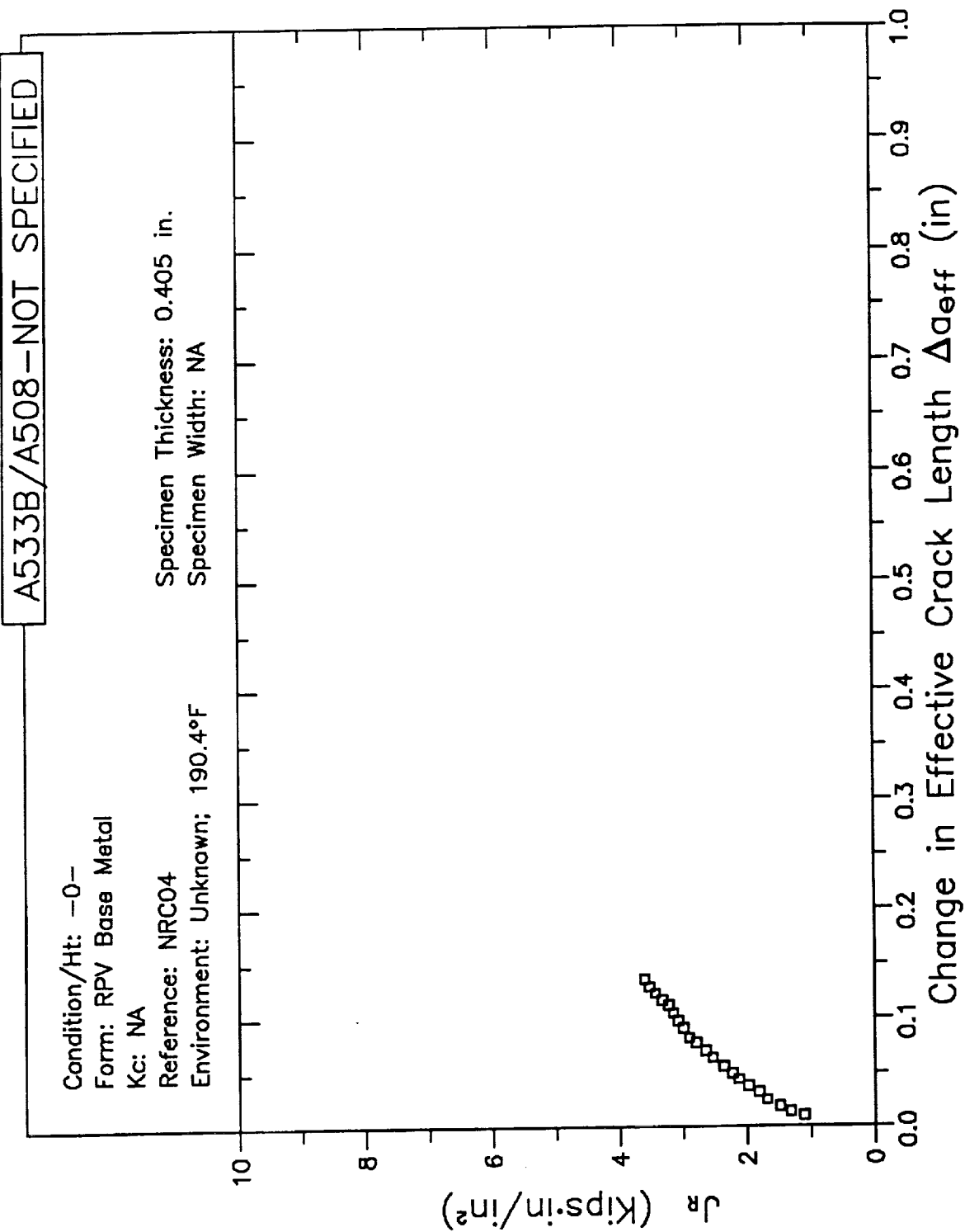
Specimen Thickness: 0.405 in.  
Specimen Width: NA



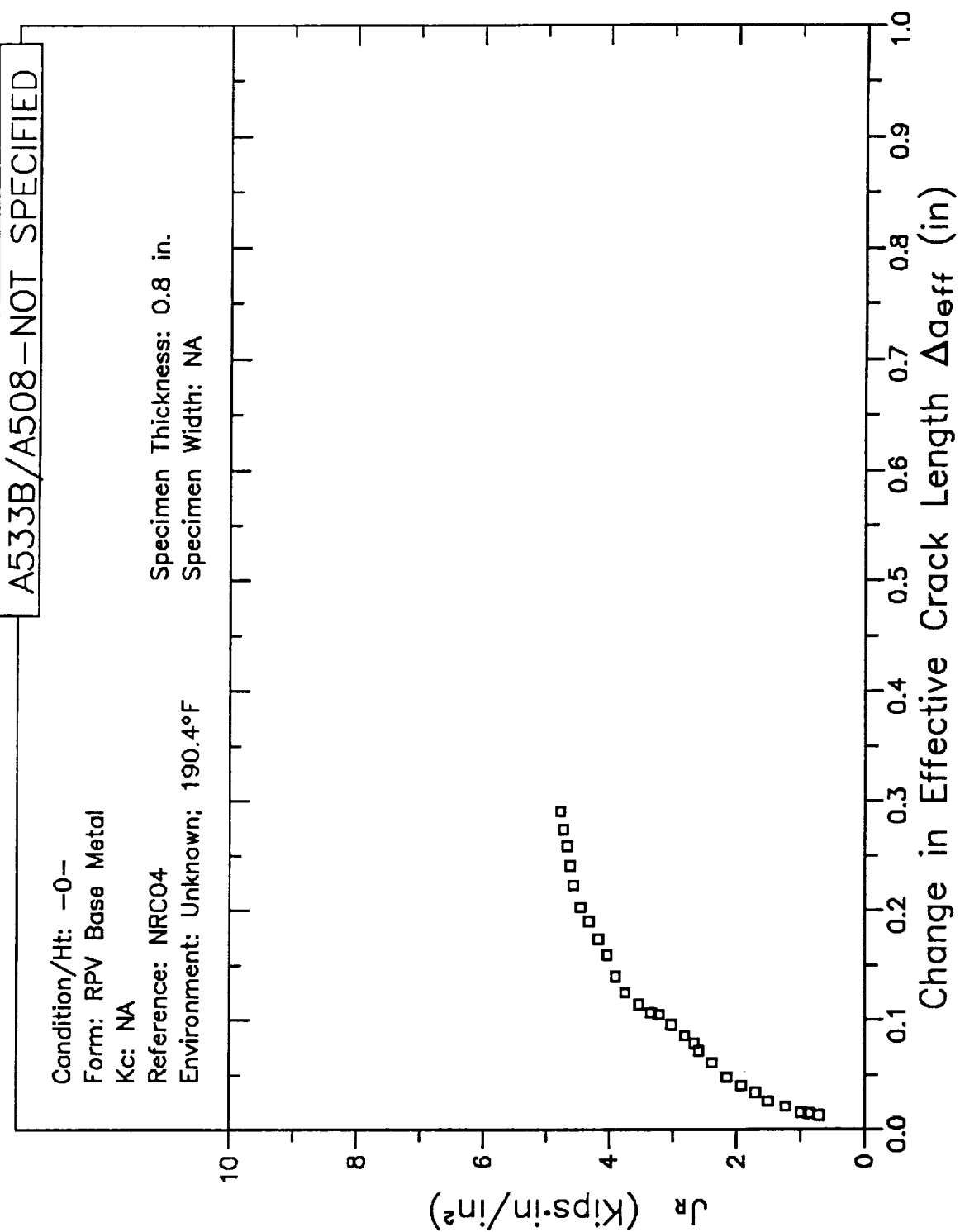
# RESISTANCE CURVE



# RESISTANCE CURVE



# RESISTANCE CURVE



# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

Condition/Ht: -0-

Form: RPV Base Metal

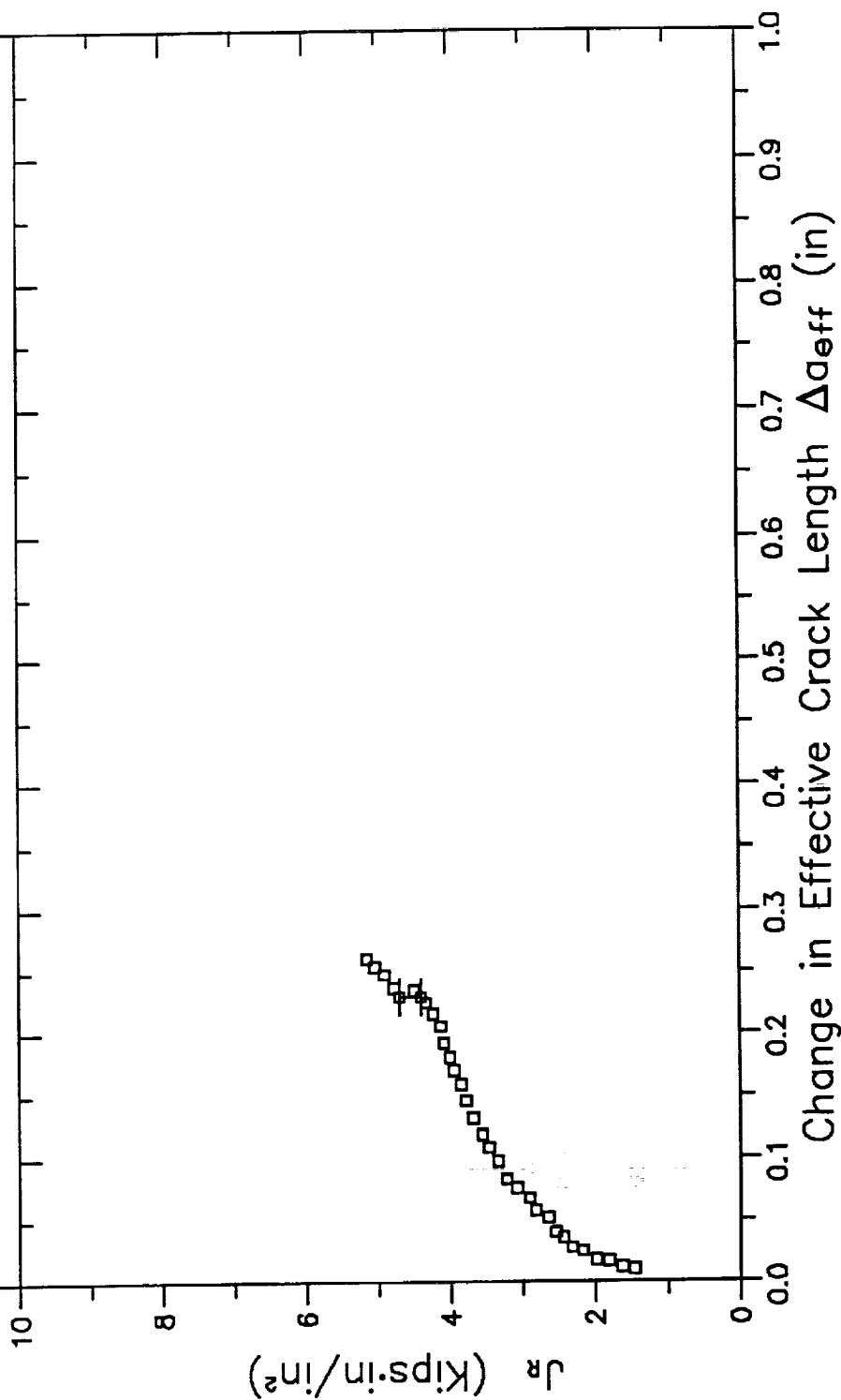
Kc: NA

Reference: NRC04

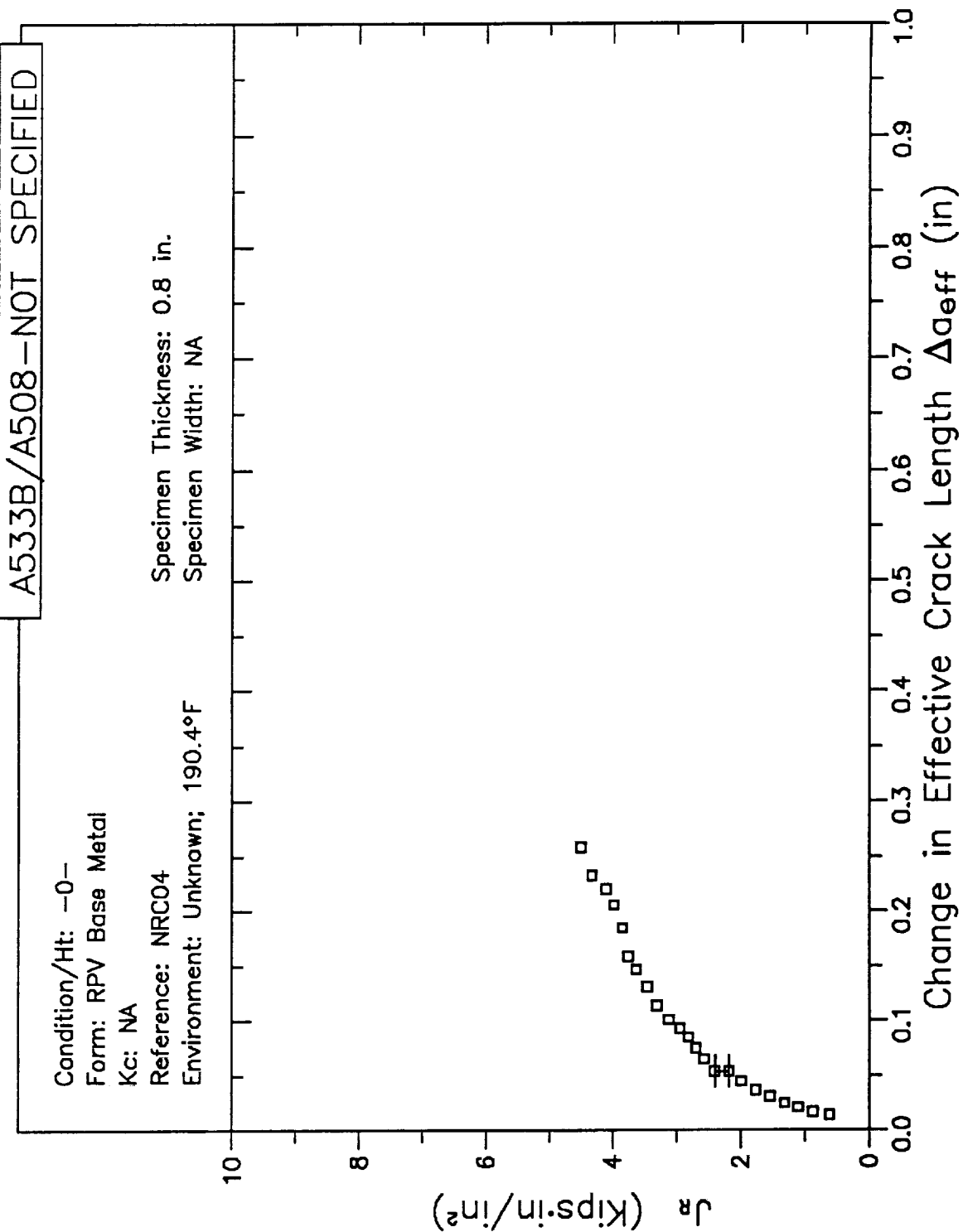
Environment: Unknown; 190.4°F

Specimen Thickness: 0.8 in.

Specimen Width: NA



# RESISTANCE CURVE

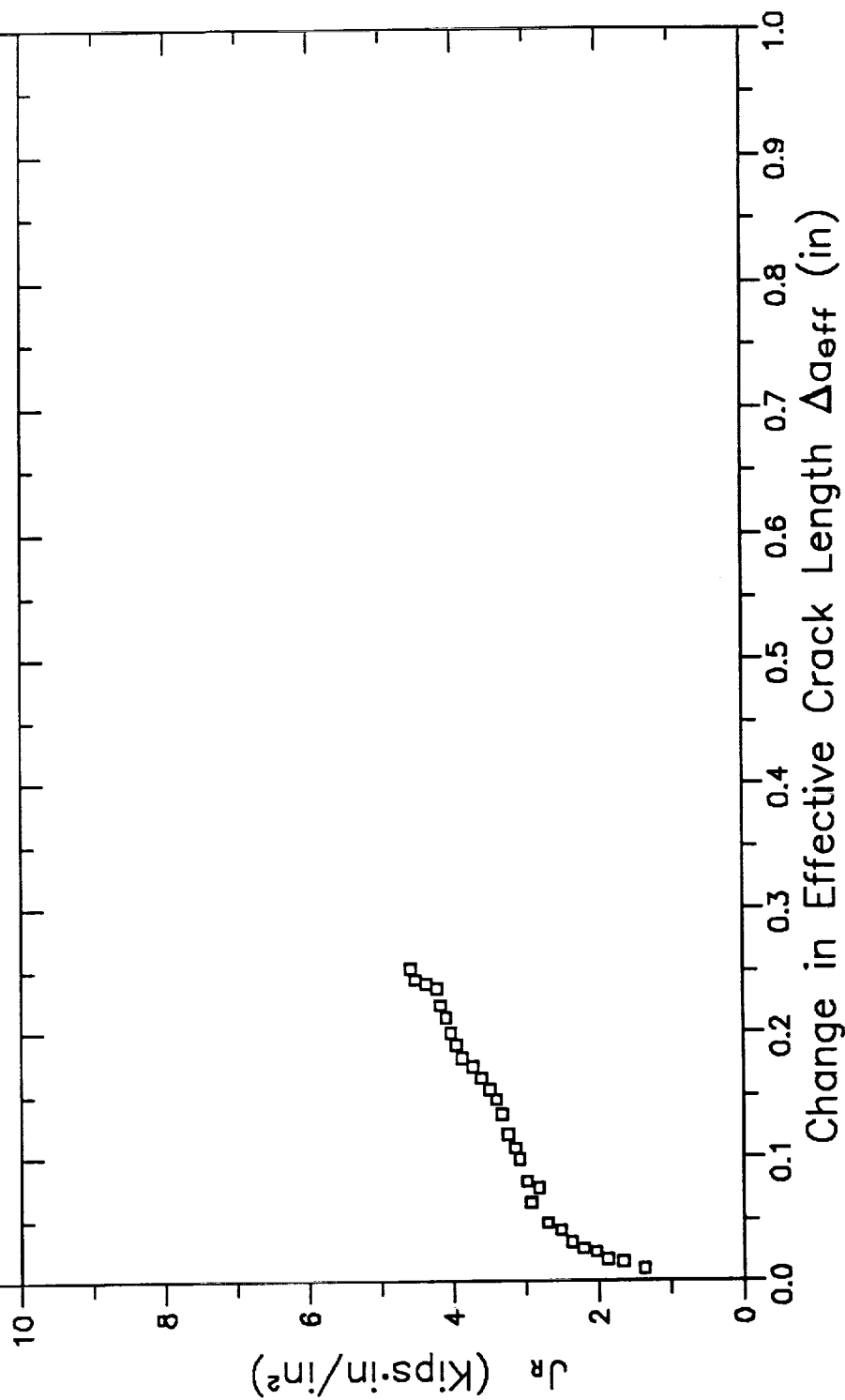


# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 190.4°F

Specimen Thickness: 0.8 in.  
Specimen Width: NA



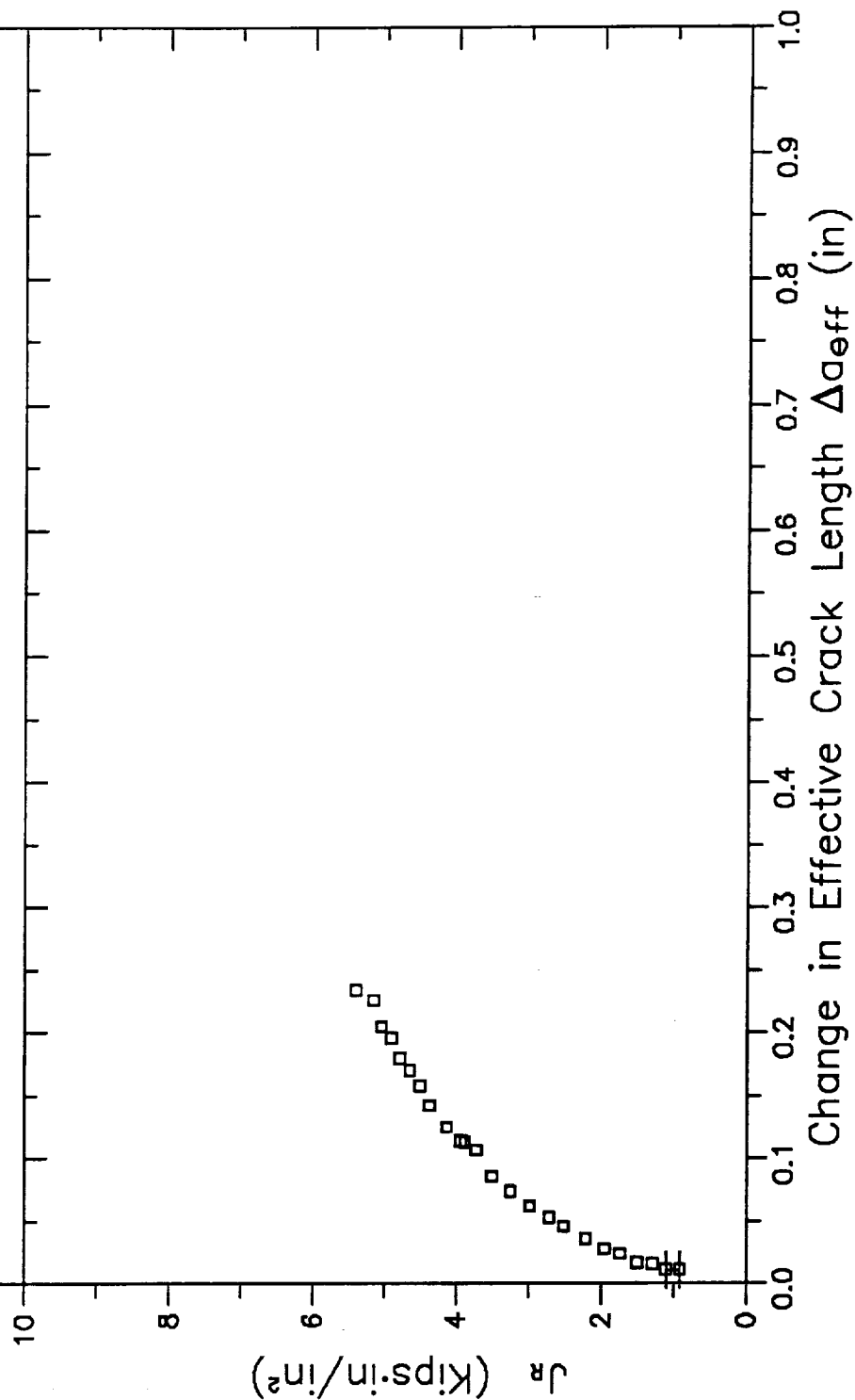
B3-80



# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 190.4°F  
Specimen Thickness: 0.8 in.  
Specimen Width: NA

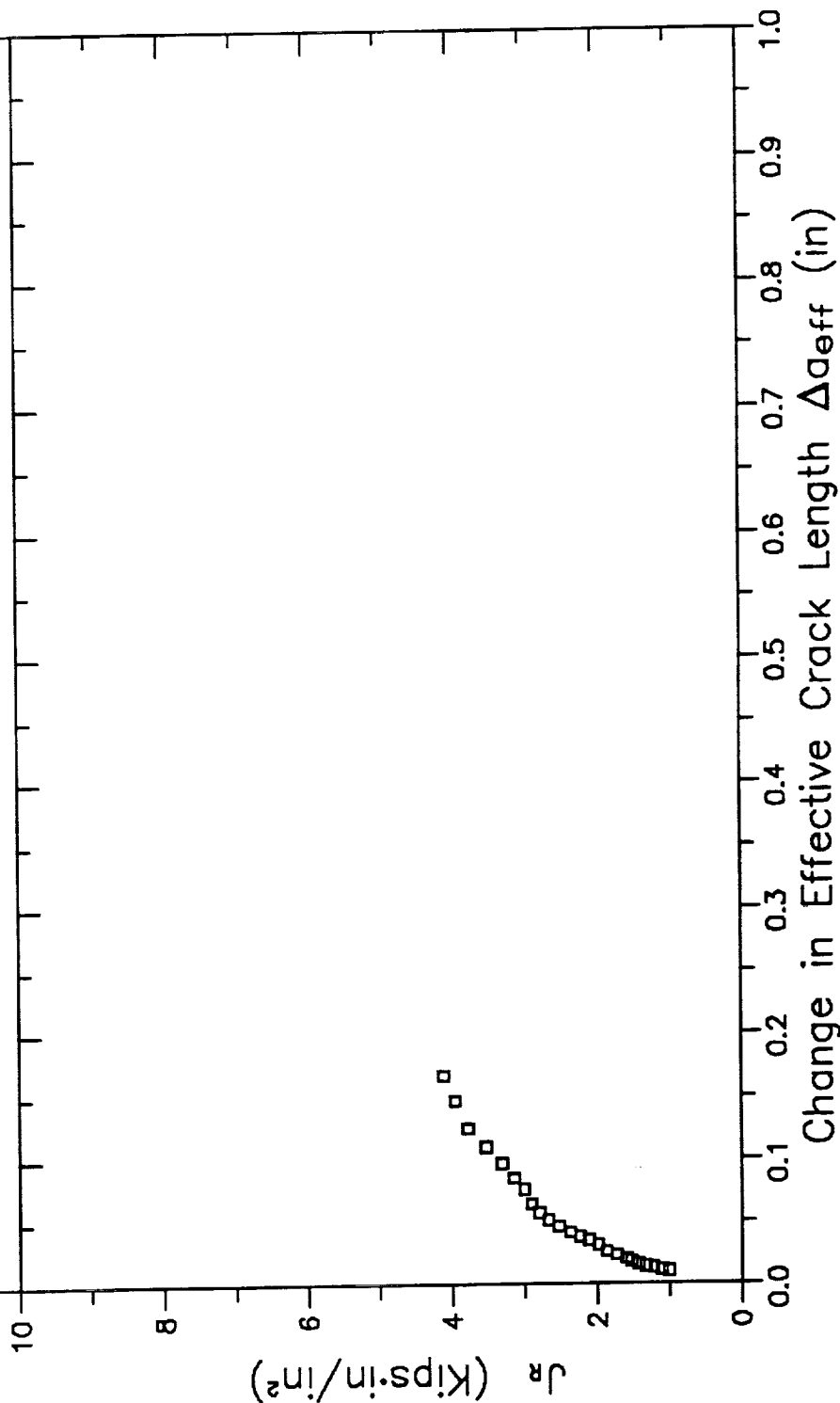


# RESISTANCE CURVE

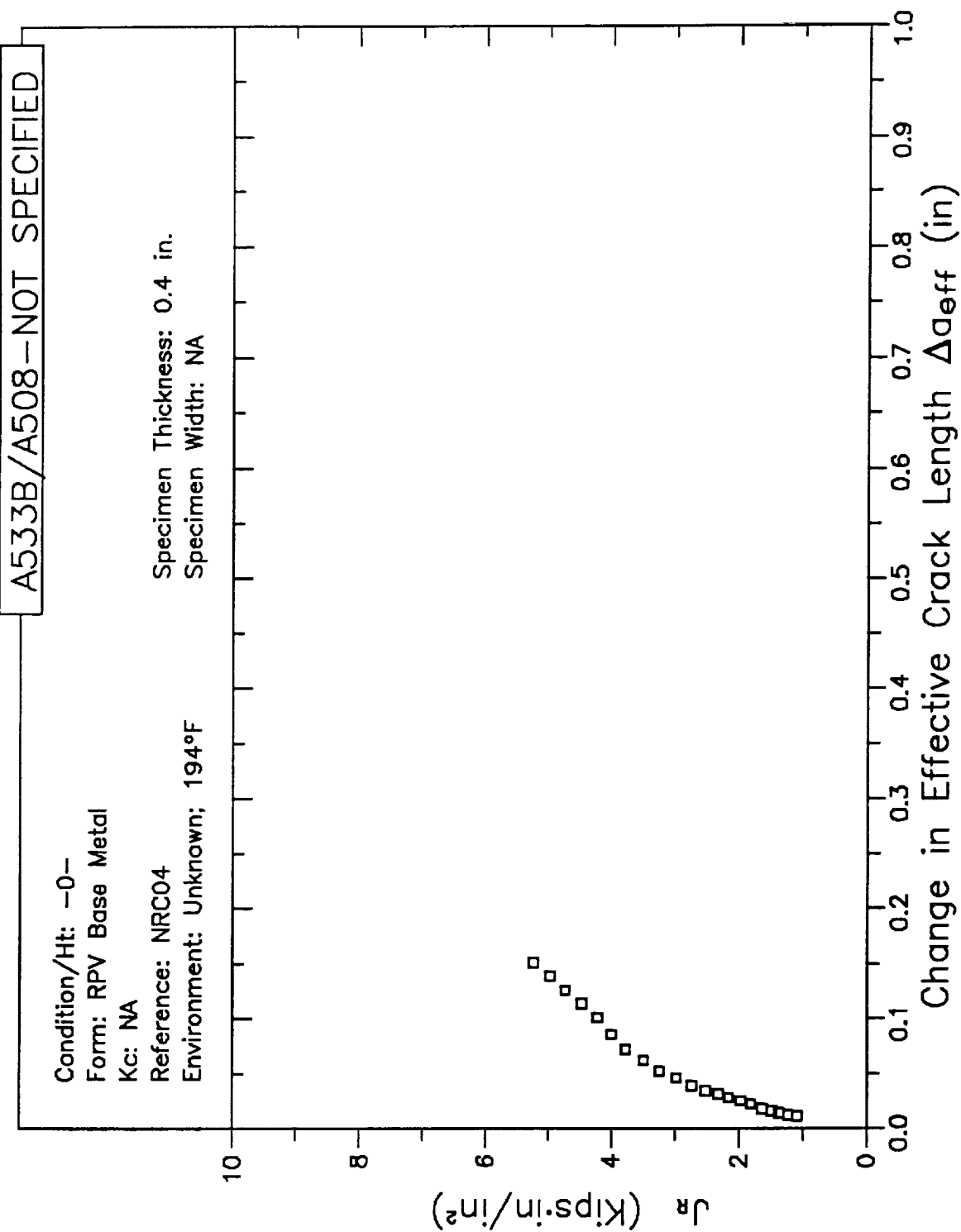
A533B/A508—NOT SPECIFIED

Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 194°F

Specimen Thickness: 0.4 in.  
Specimen Width: NA



# RESISTANCE CURVE

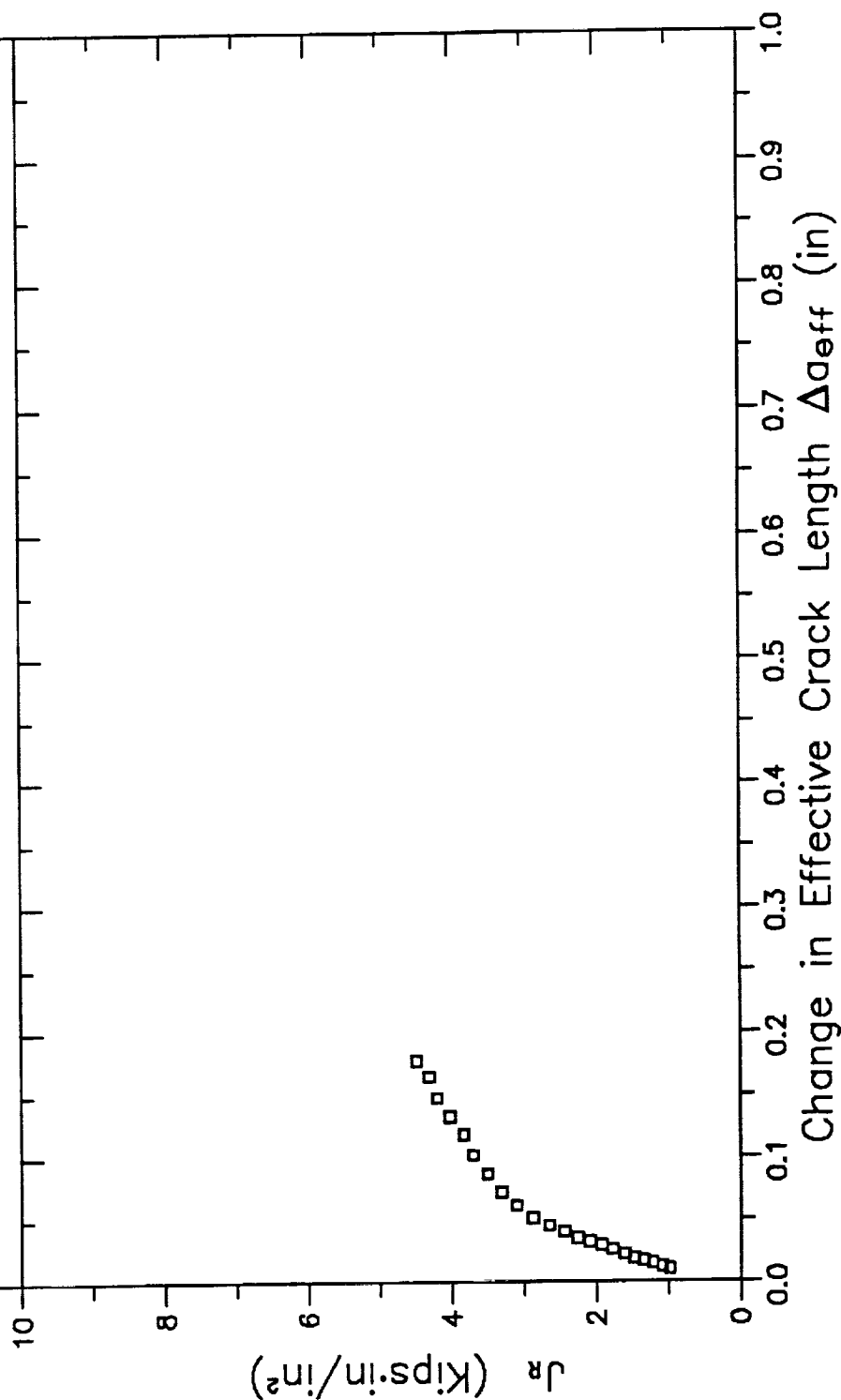


# RESISTANCE CURVE

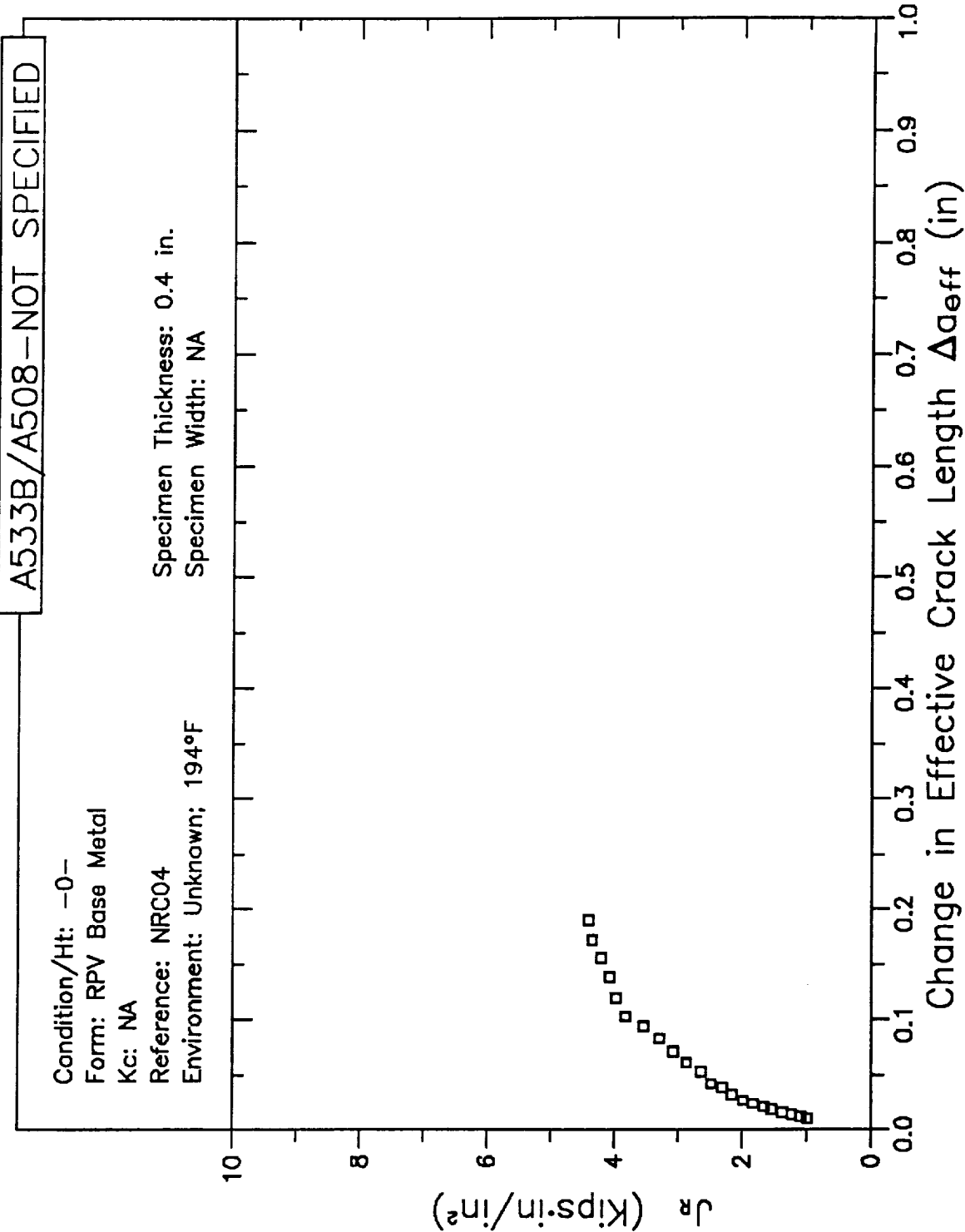
A533B/A508 - NOT SPECIFIED

Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 194°F

Specimen Thickness: 0.4 in.  
Specimen Width: NA



# RESISTANCE CURVE

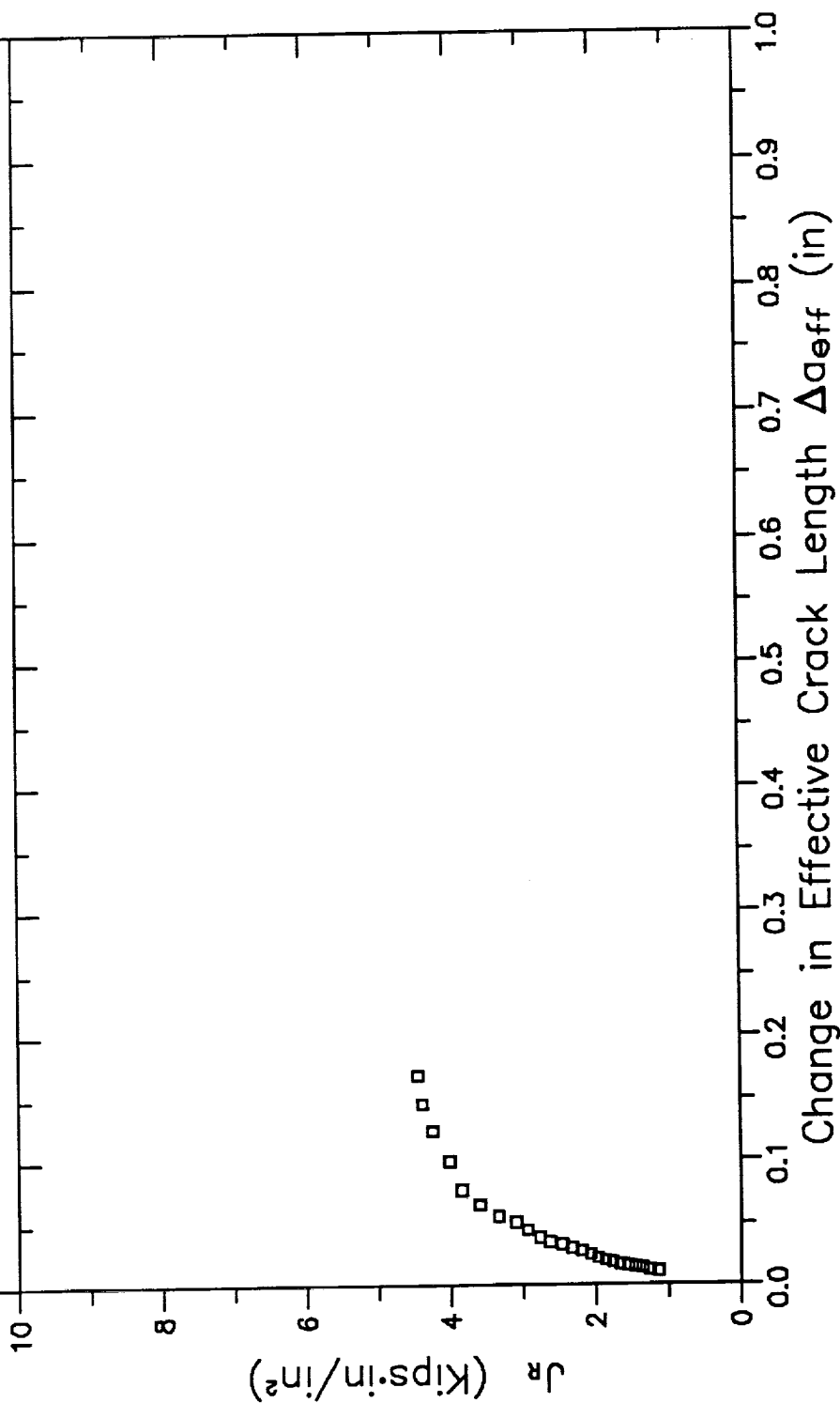


# RESISTANCE CURVE

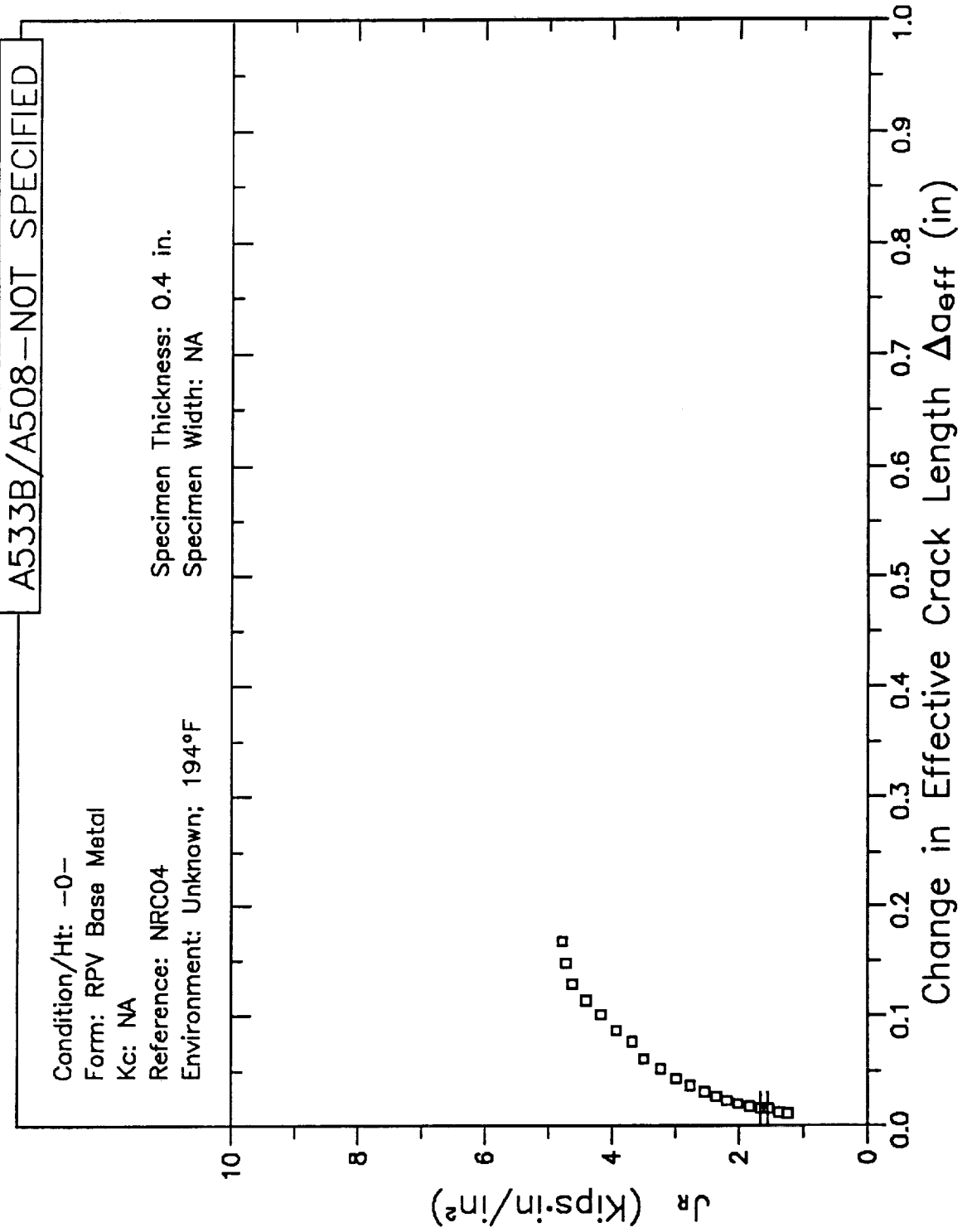
A533B/A508—NOT SPECIFIED

Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 194°F

Specimen Thickness: 0.4 in.  
Specimen Width: NA



# RESISTANCE CURVE

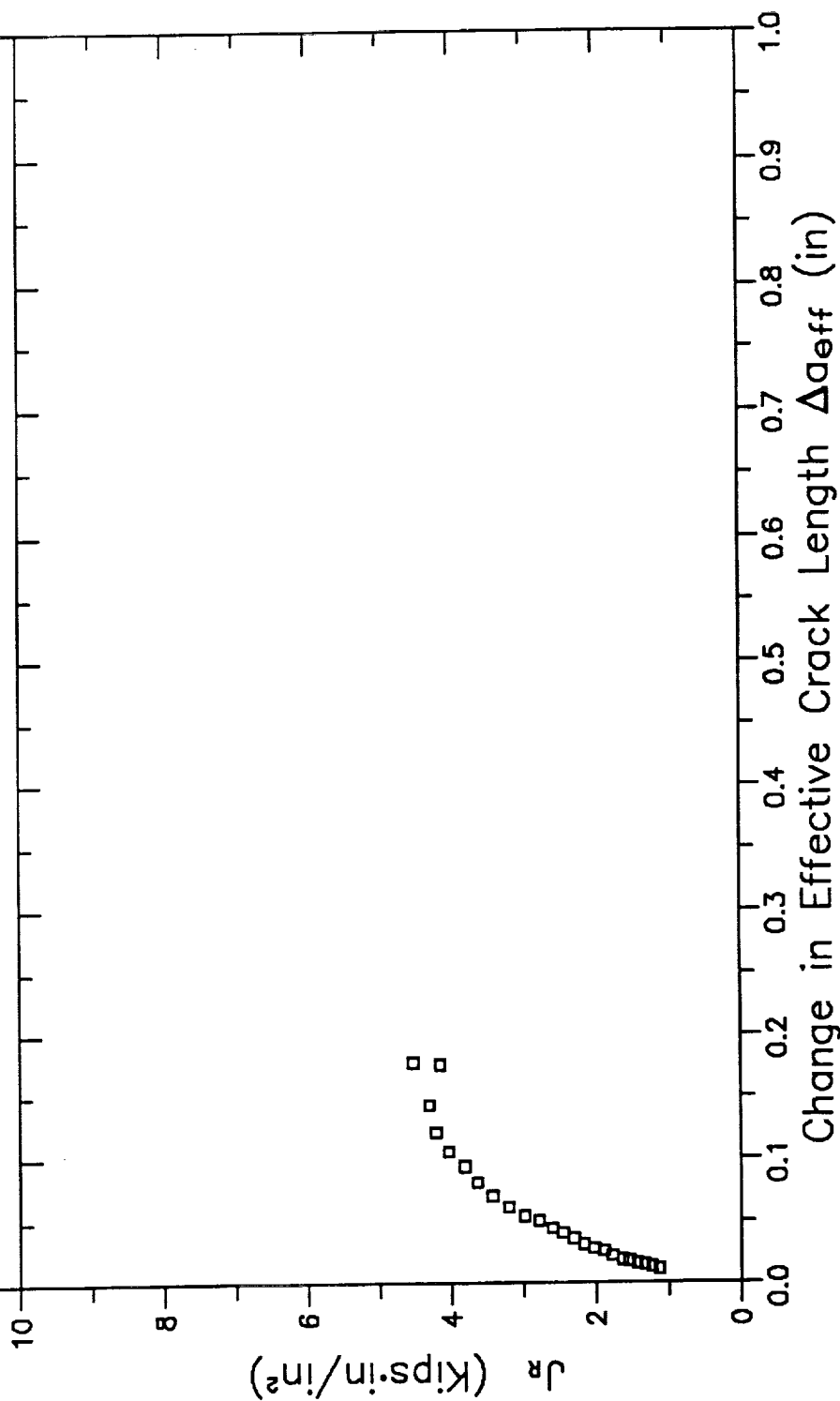


# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 194°F

Specimen Thickness: 0.4 in.  
Specimen Width: NA



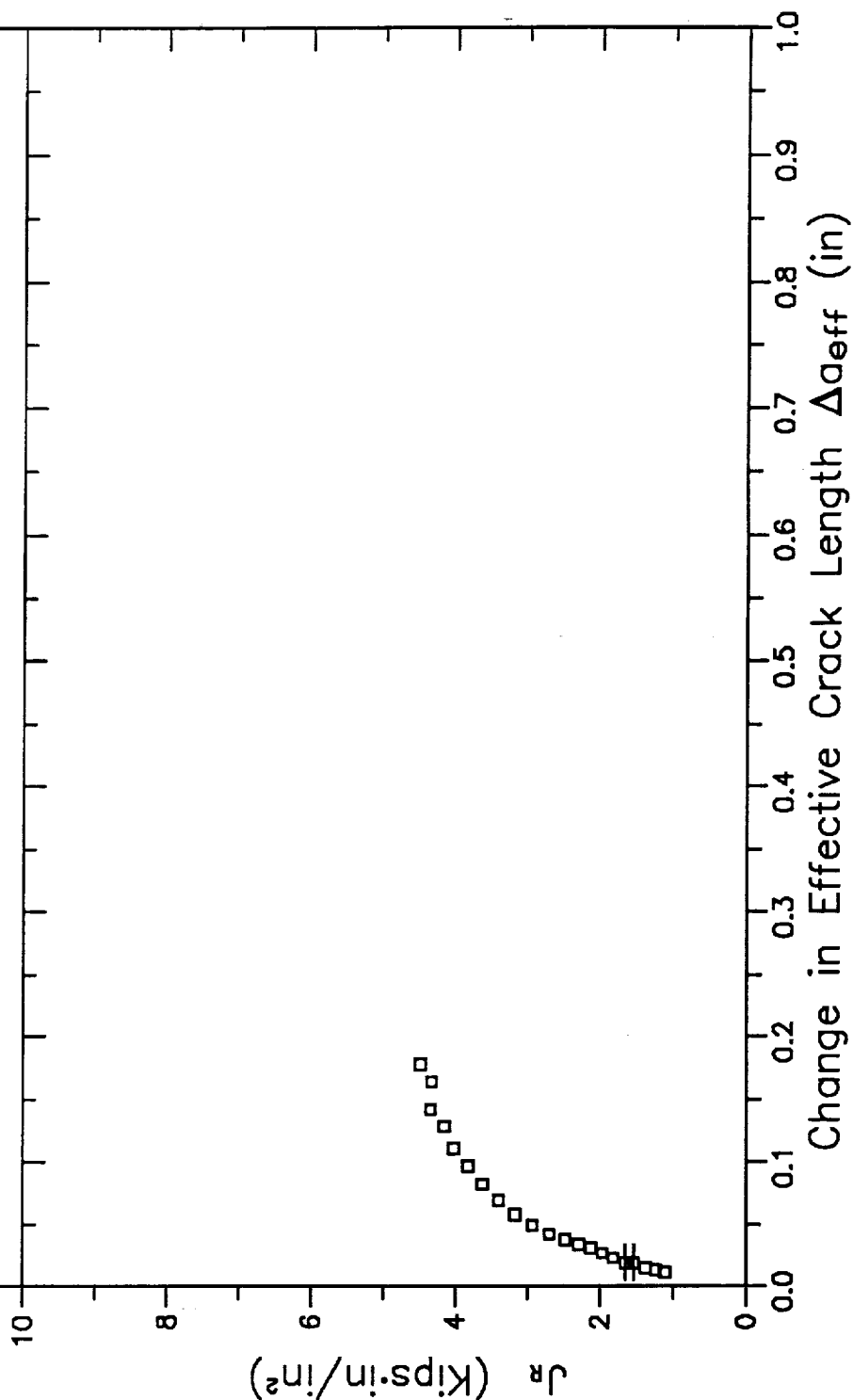


# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 194°F

Specimen Thickness: 0.4 in.  
Specimen Width: NA

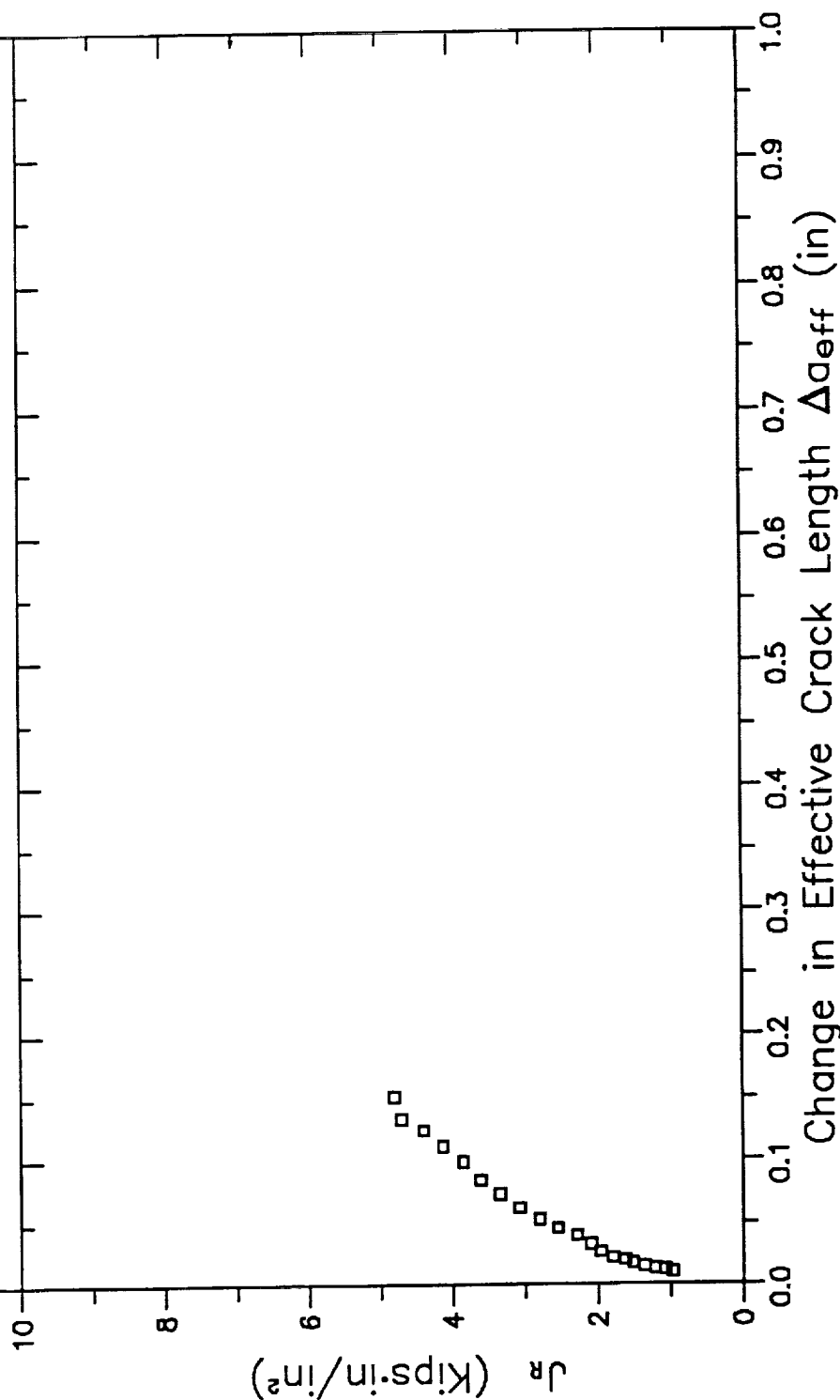


# RESISTANCE CURVE

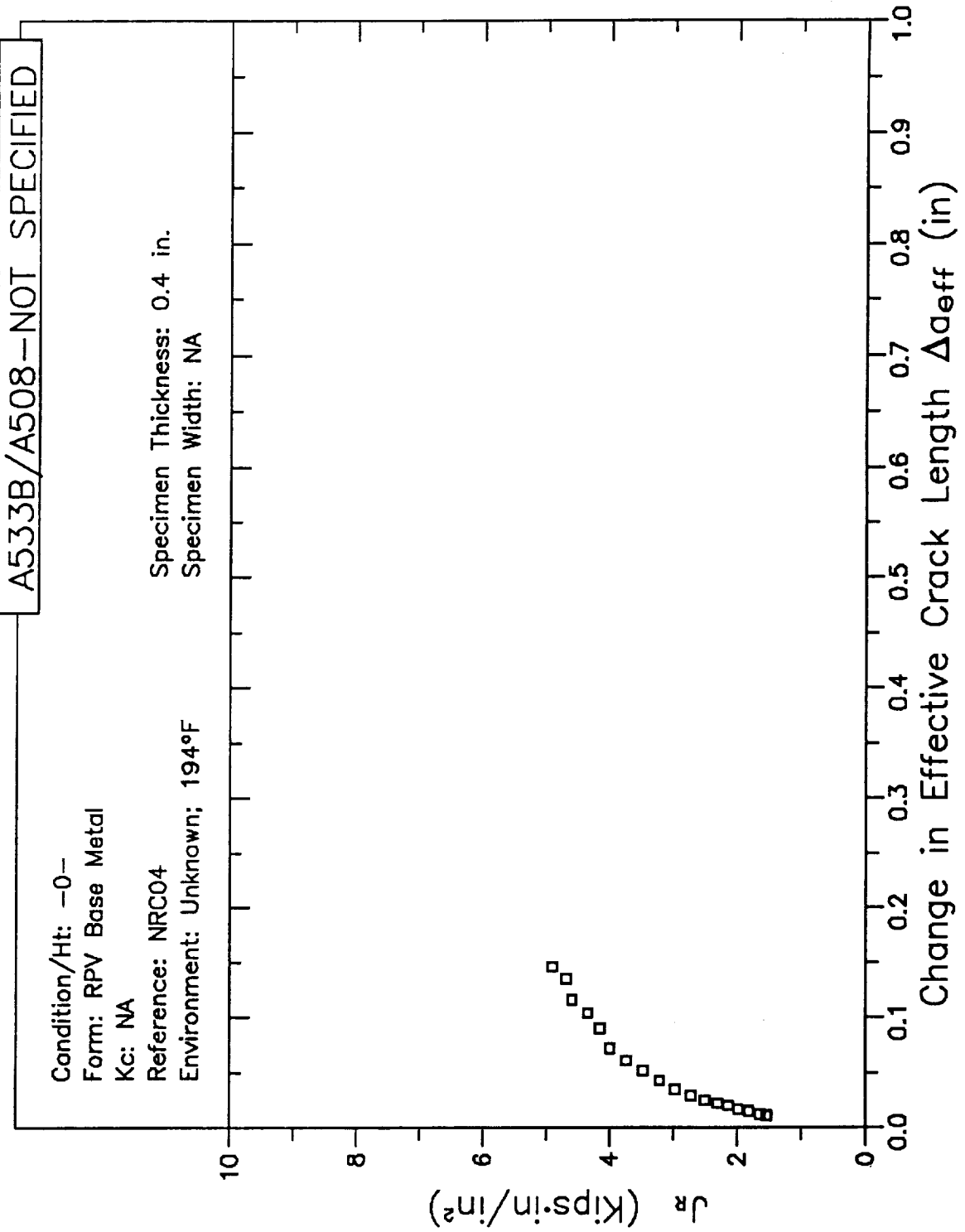
A533B/A508—NOT SPECIFIED

Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 194°F

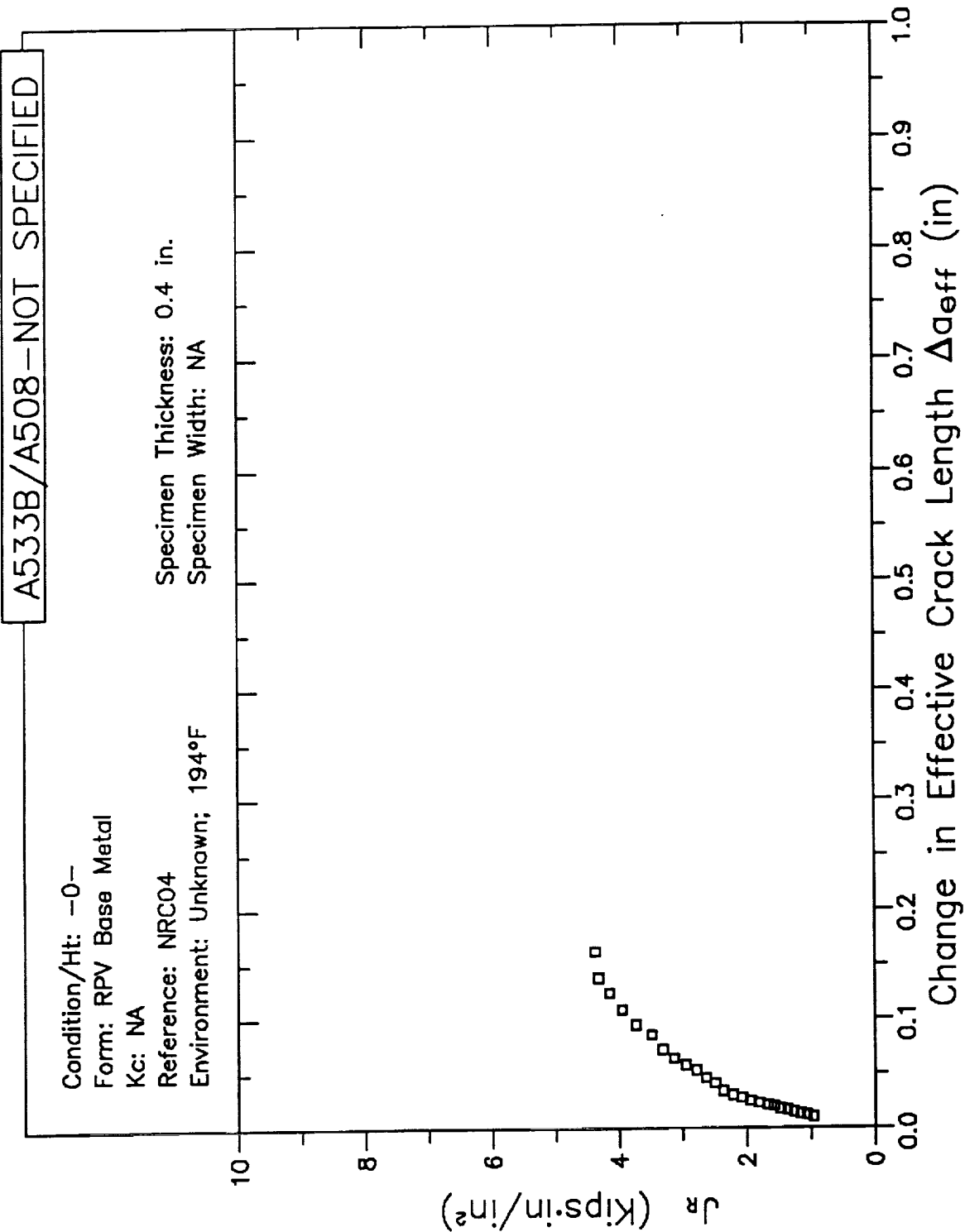
Specimen Thickness: 0.4 in.  
Specimen Width: NA



# RESISTANCE CURVE



# RESISTANCE CURVE

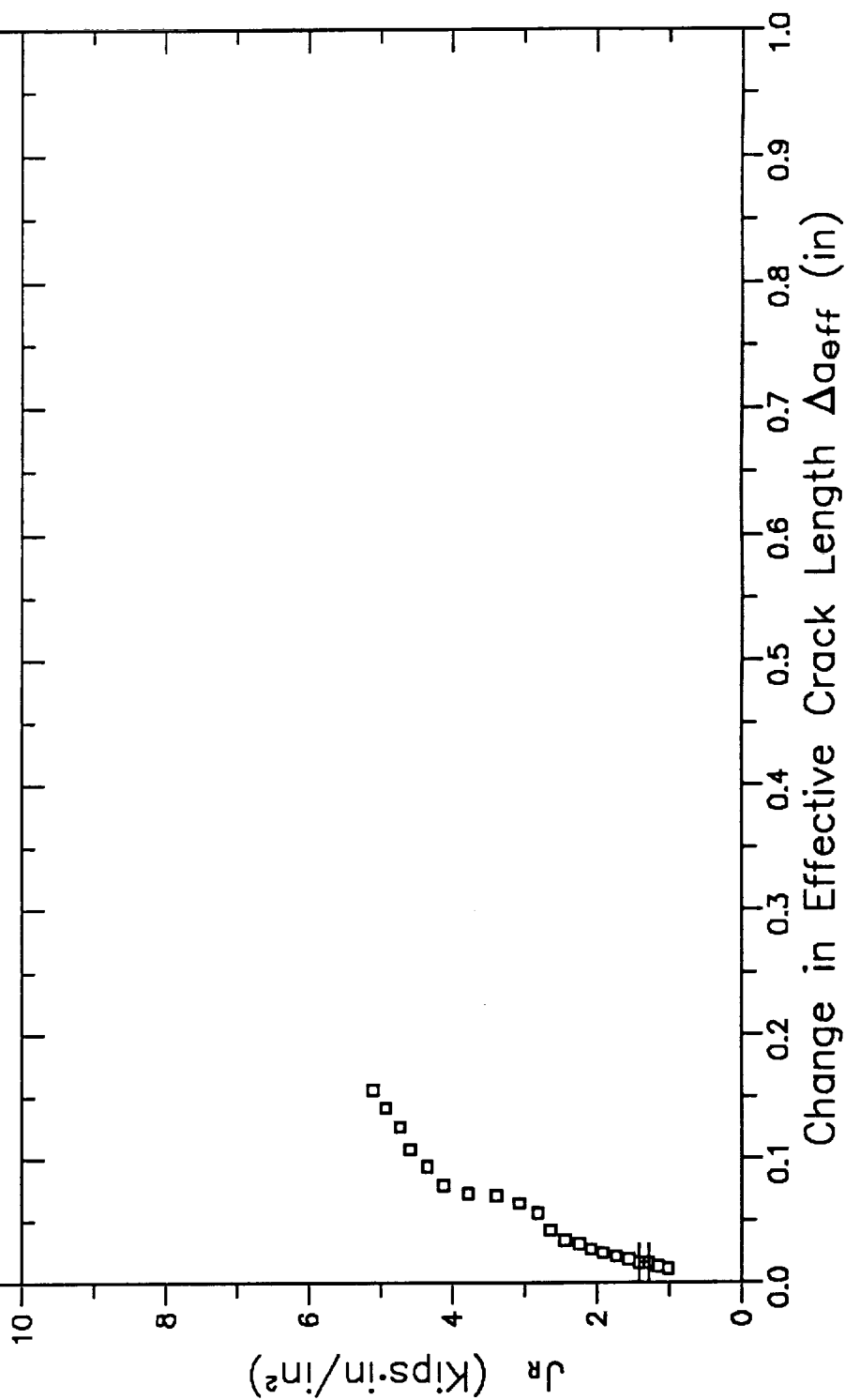


# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 194°F

Specimen Thickness: 0.4 in.  
Specimen Width: NA

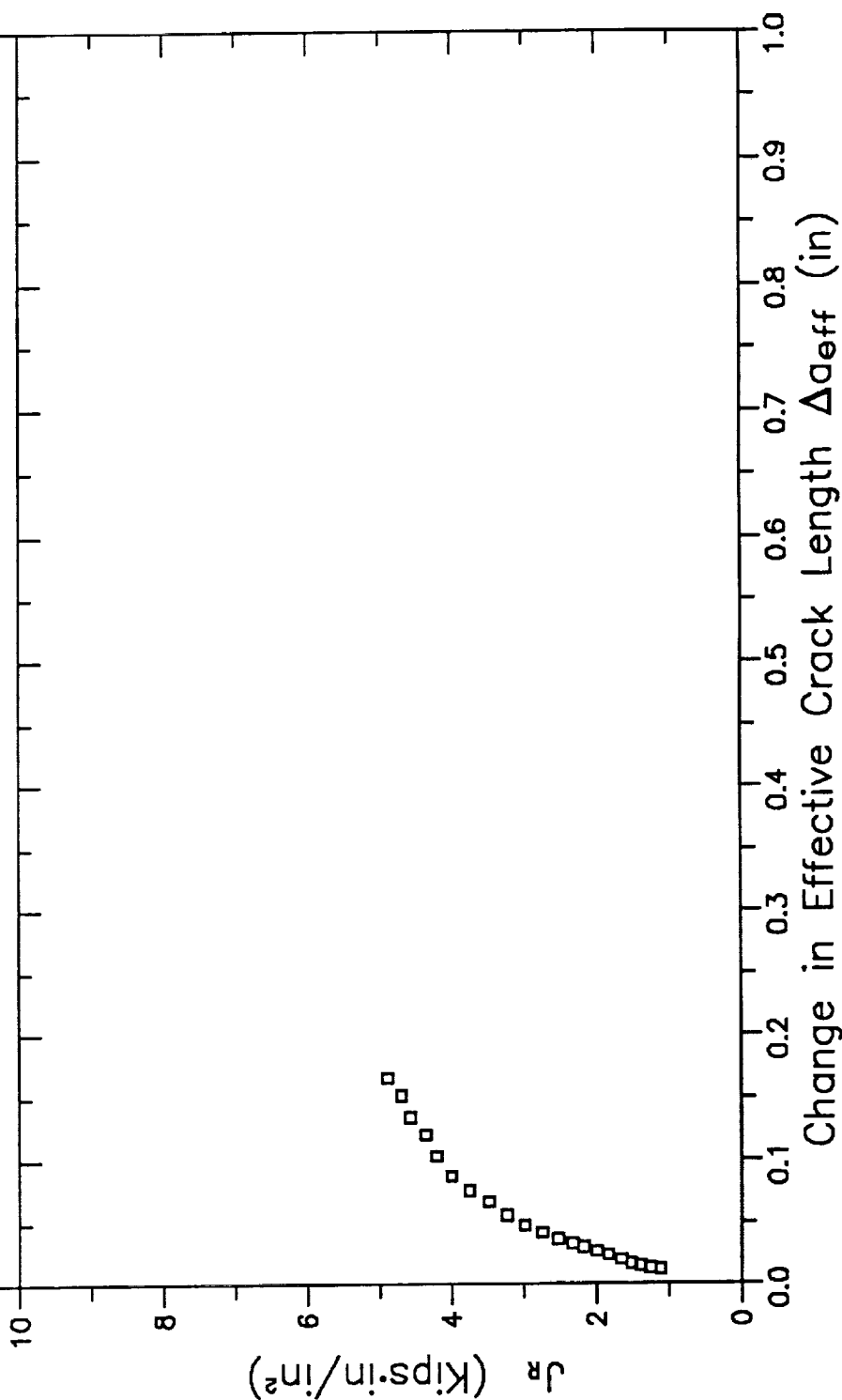


# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 194°F

Specimen Thickness: 0.4 in.  
Specimen Width: NA



# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

Condition/Ht: -0-

Form: RPV Base Metal

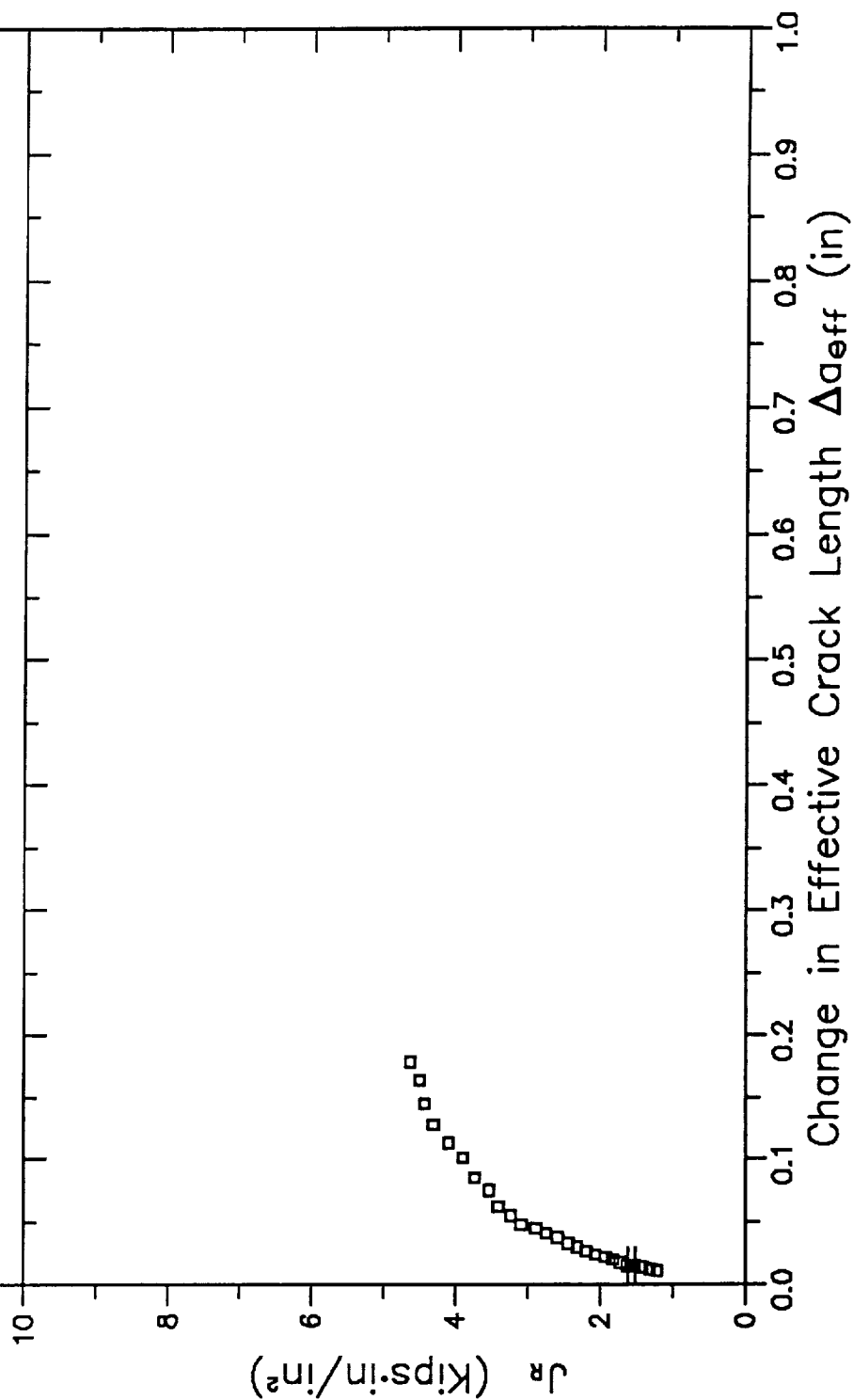
Kc: NA

Reference: NRC04

Environment: Unknown; 194°F

Specimen Thickness: 0.4 in.

Specimen Width: NA

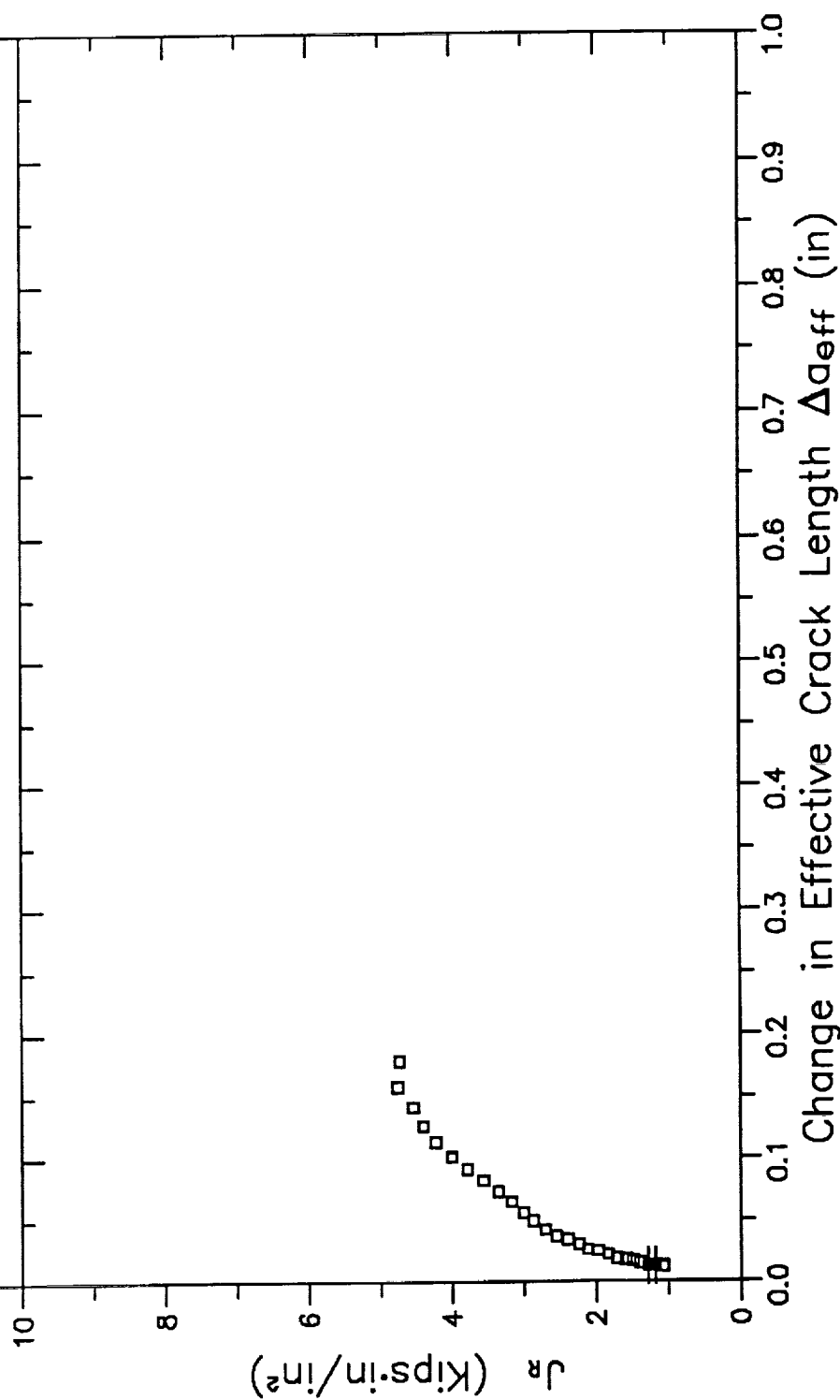


# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

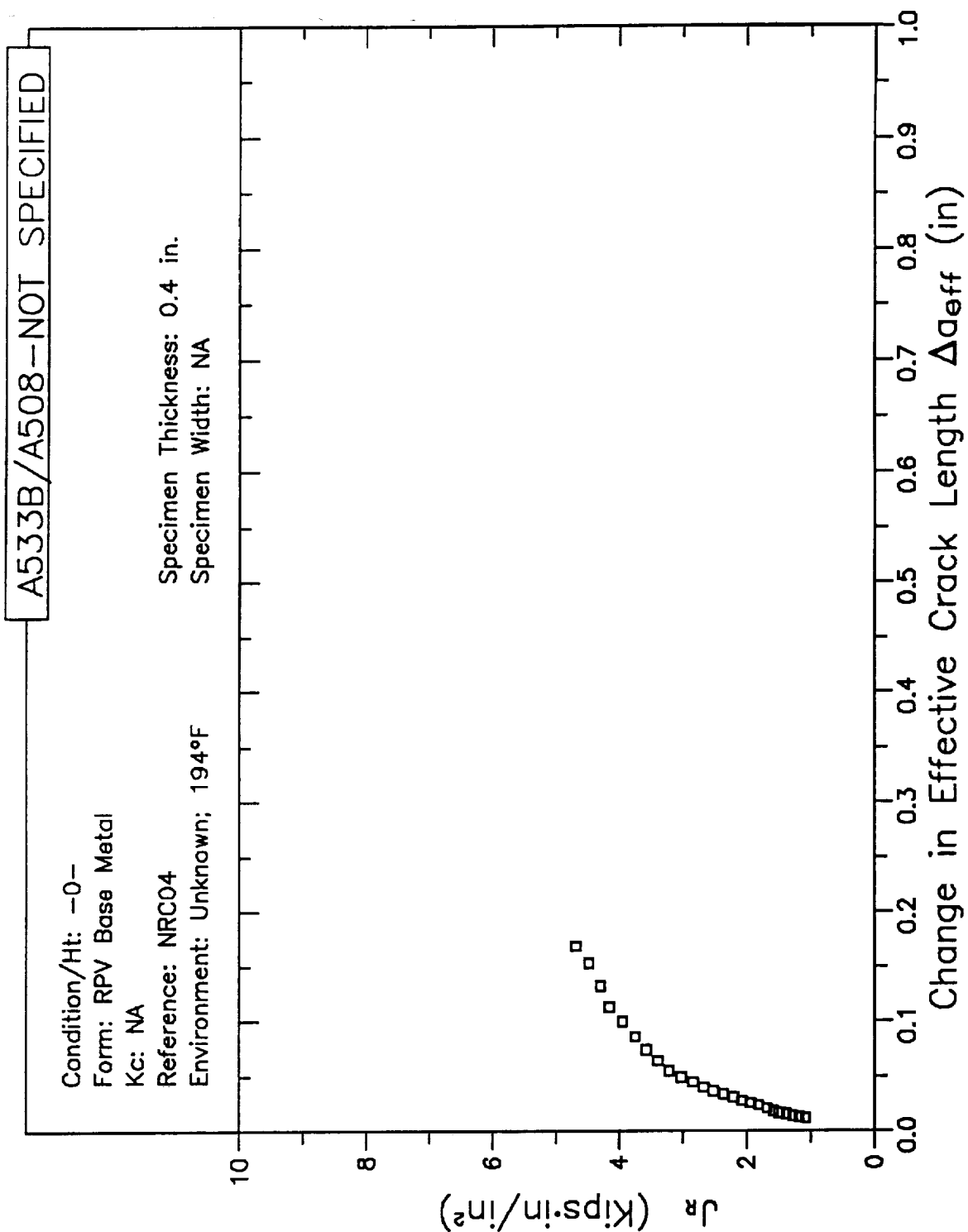
Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 194°F

Specimen Thickness: 0.4 in.  
Specimen Width: NA





# RESISTANCE CURVE

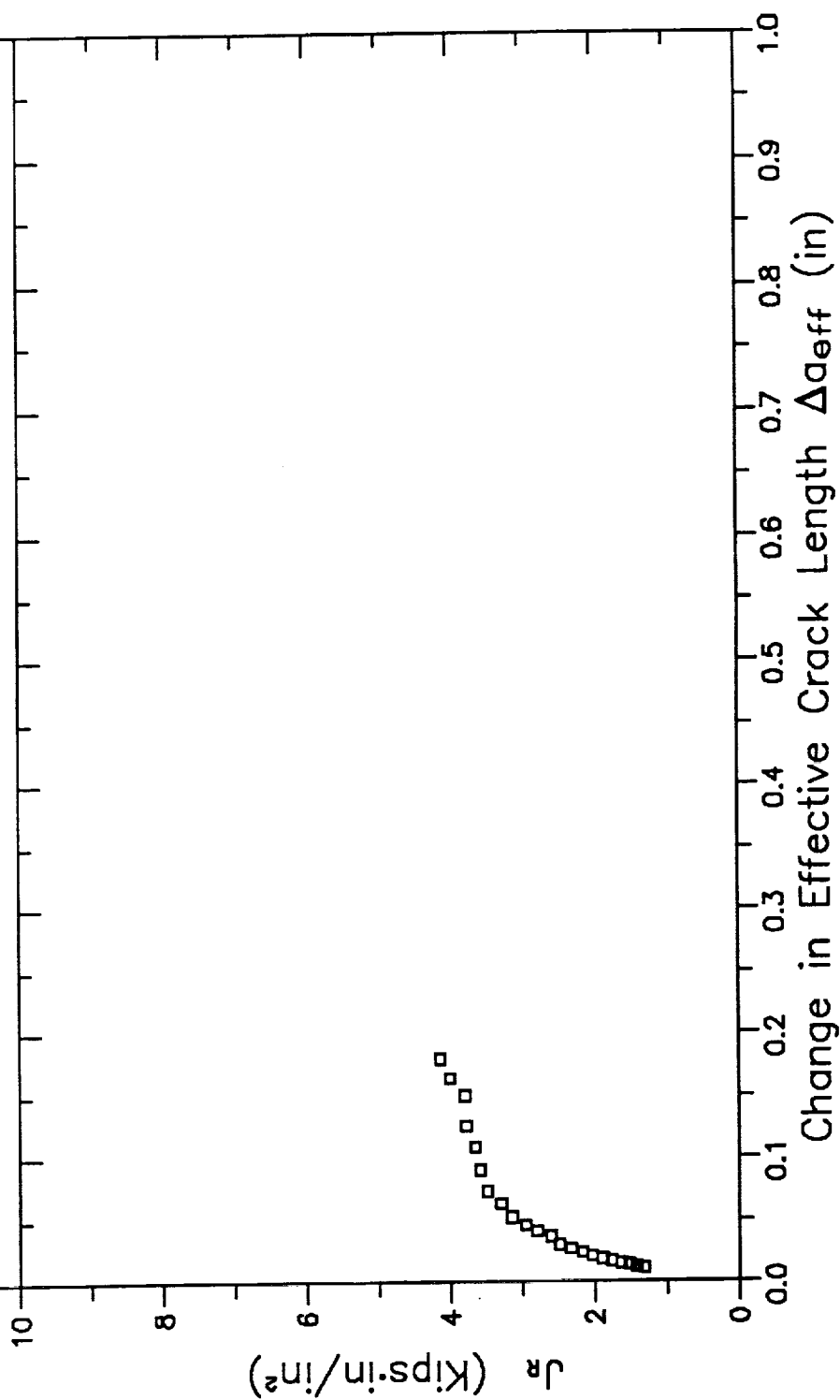


# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 194°F

Specimen Thickness: 0.4 in.  
Specimen Width: NA



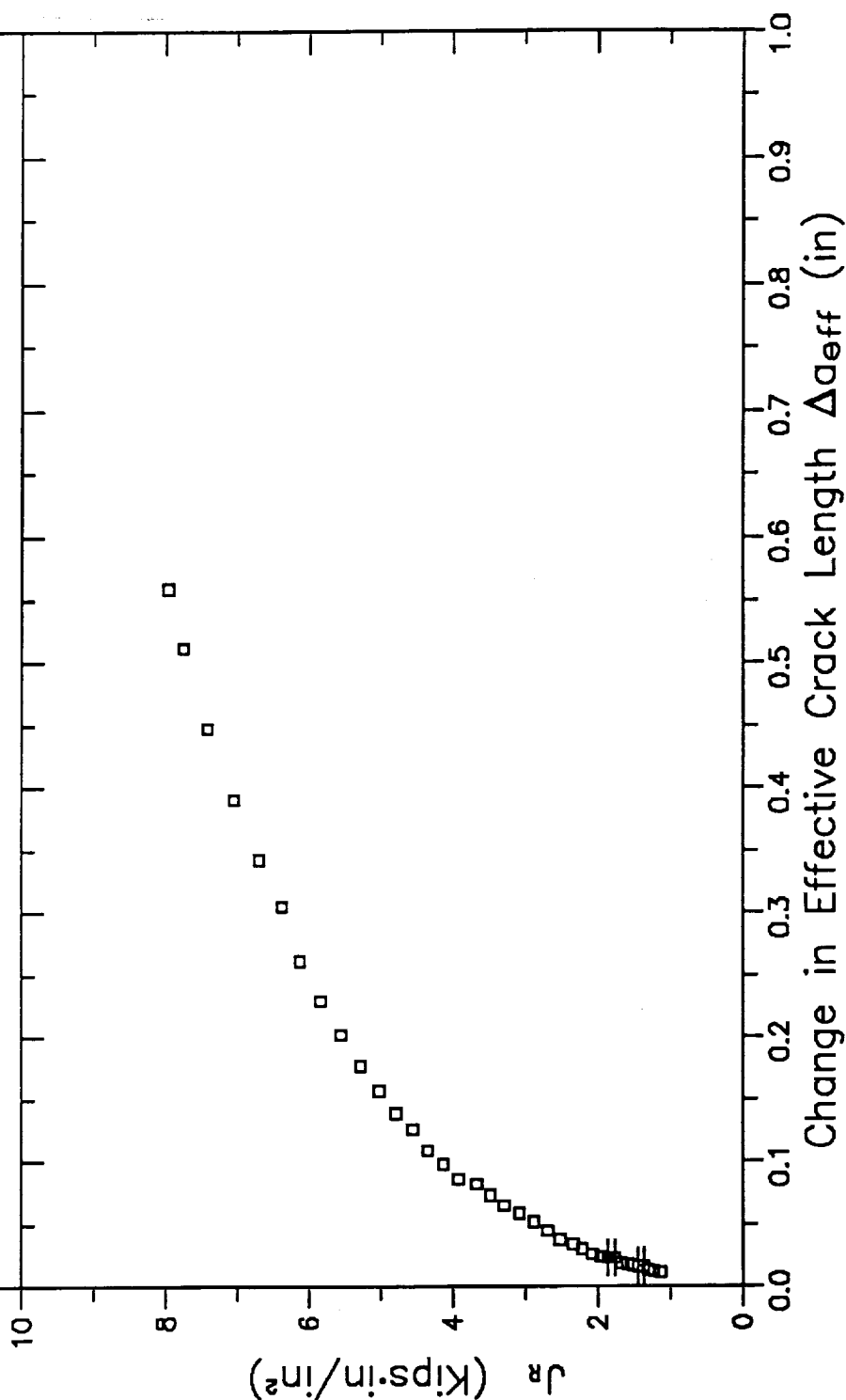
B3-98

# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 194°F

Specimen Thickness: 1.28 in.  
Specimen Width: NA

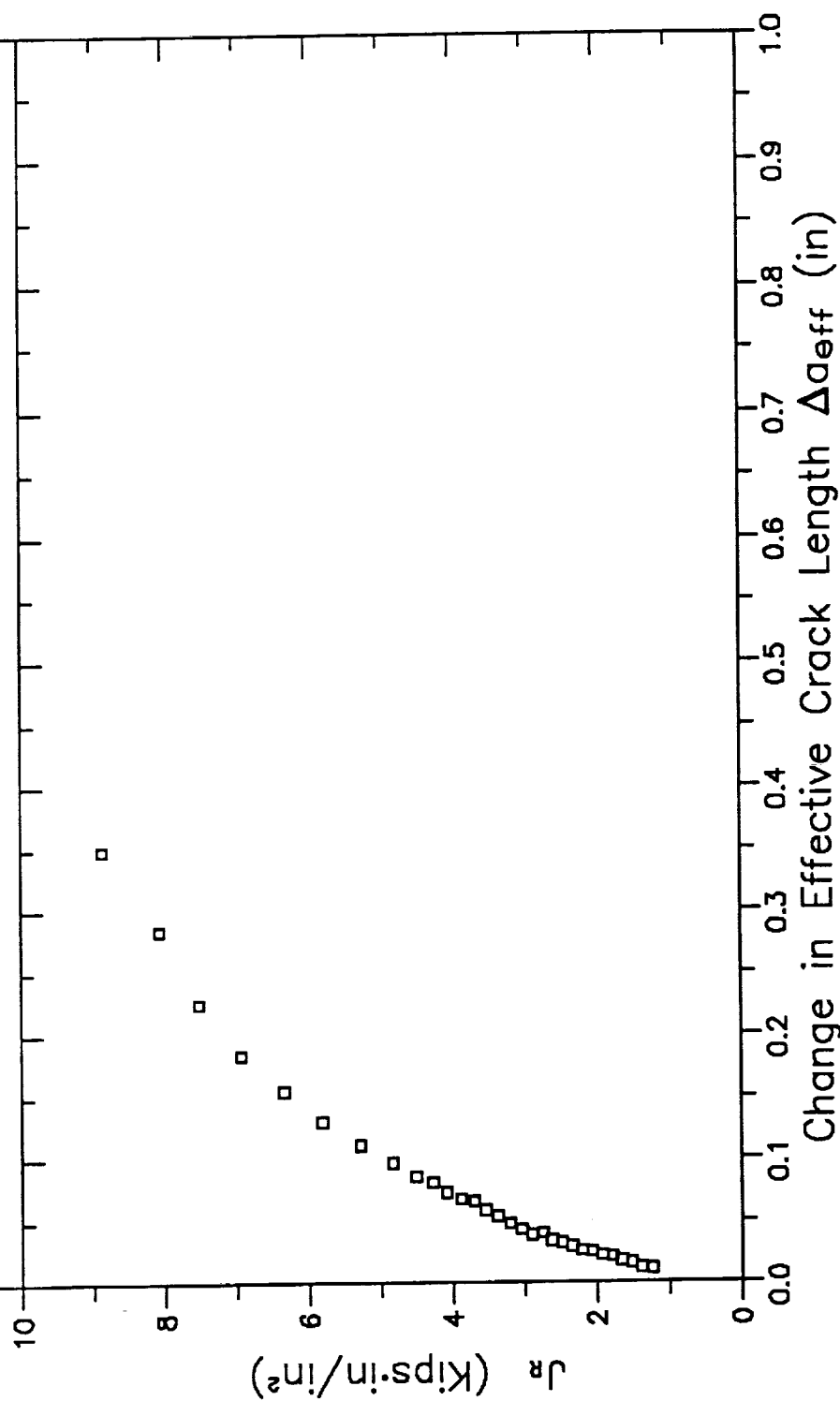


# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

Condition/Hlt: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 194°F

Specimen Thickness: 1.28 in.  
Specimen Width: NA



B3-100

# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

Condition/Ht: -0-

Form: RPV Base Metal

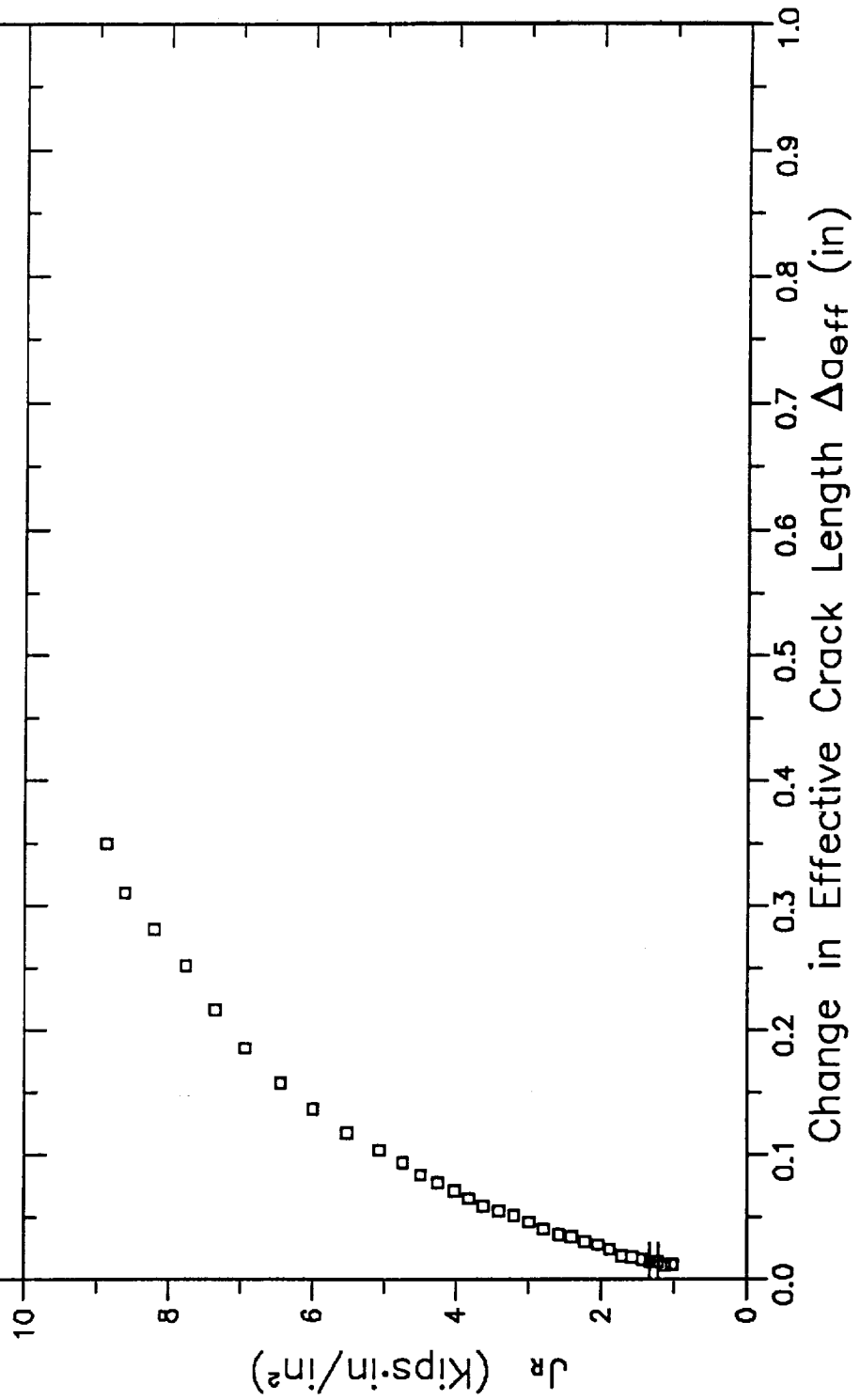
Kc: NA

Reference: NRC04

Environment: Unknown; 194°F

Specimen Thickness: 1.28 in.

Specimen Width: NA



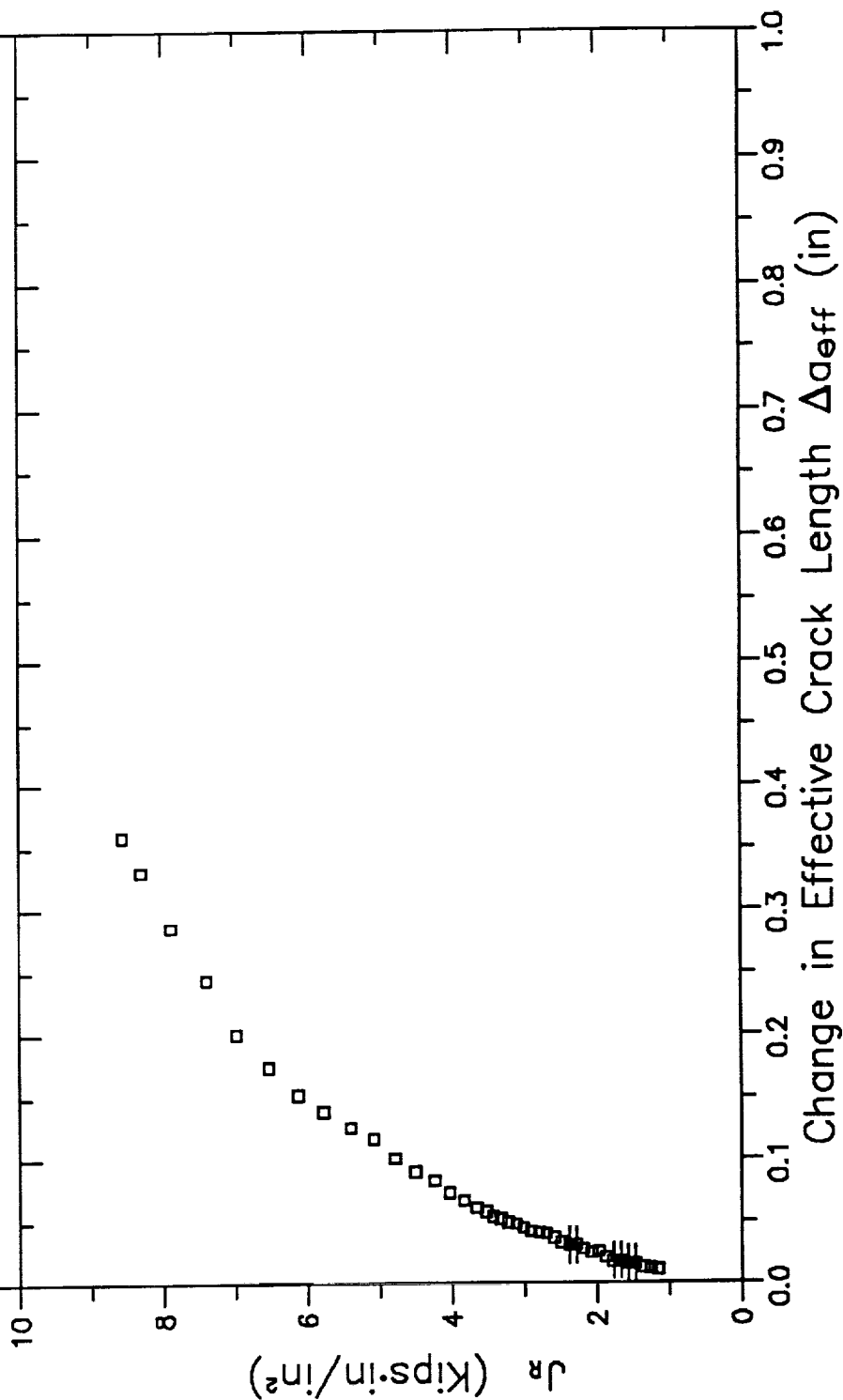
B3-101

# RESISTANCE CURVE

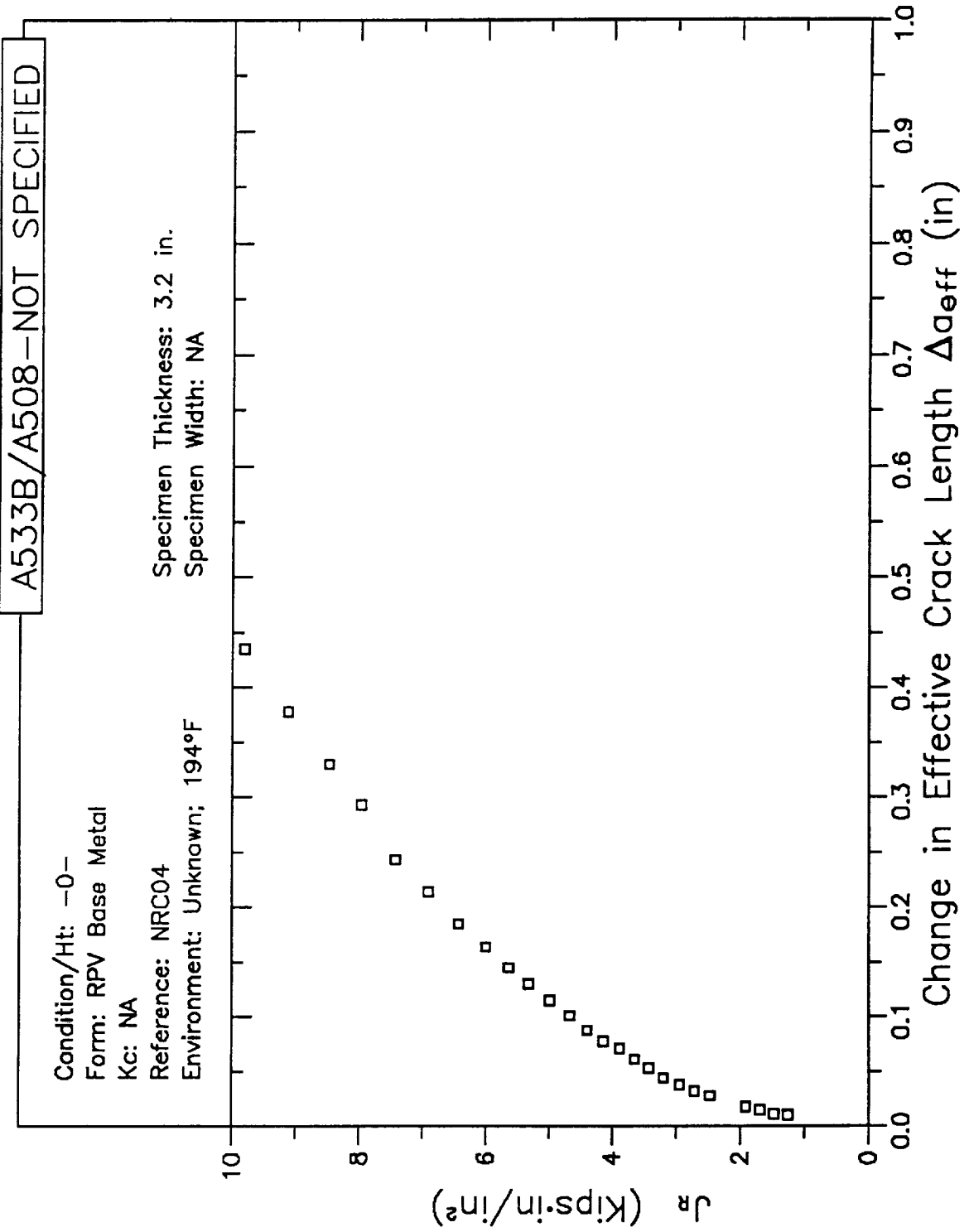
A533B/A508—NOT SPECIFIED

Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 194°F

Specimen Thickness: 1.28 in.  
Specimen Width: NA



# RESISTANCE CURVE



# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

Condition/Ht: -0-

Form: RPV Base Metal

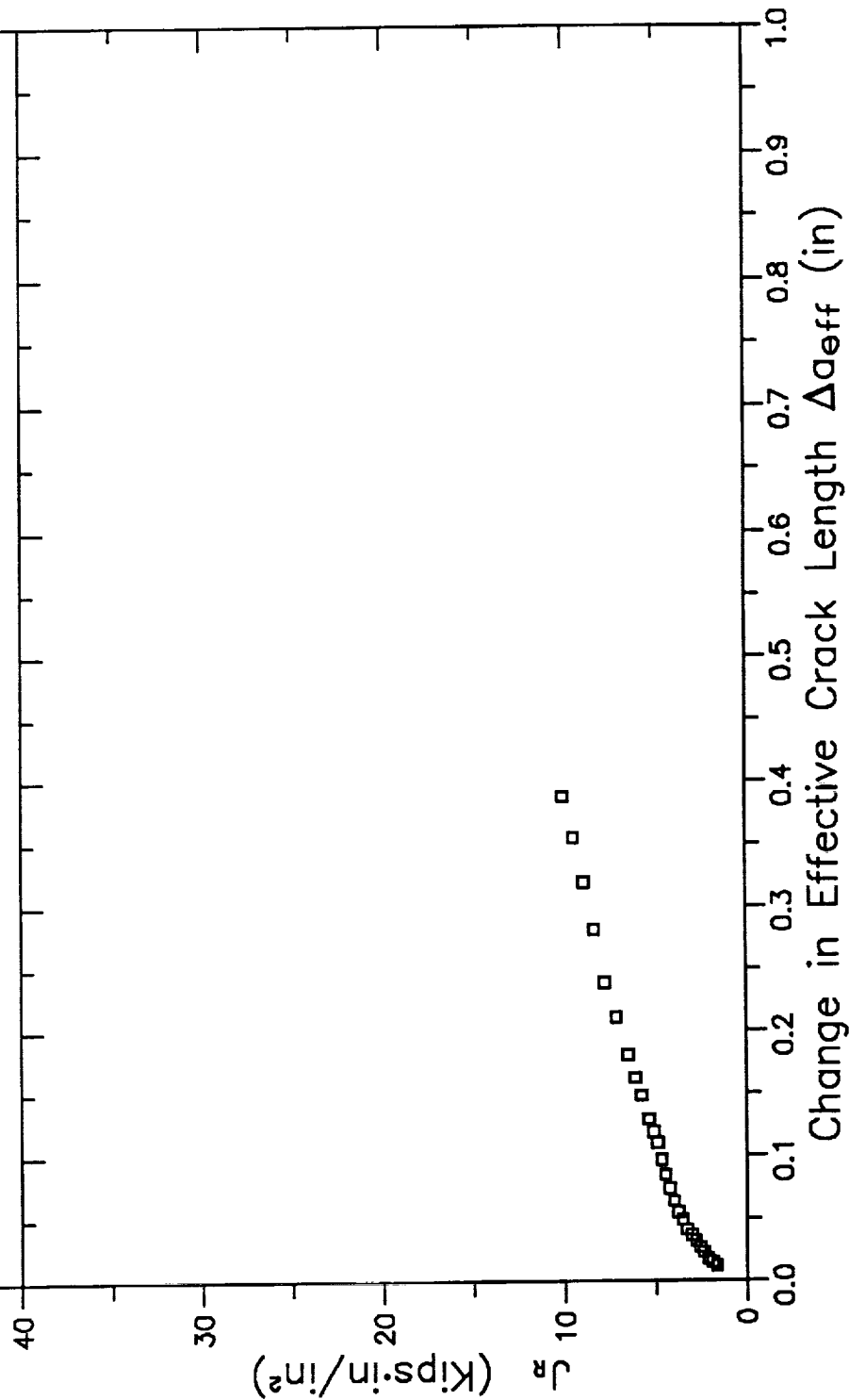
Kc: NA

Reference: NRC04

Environment: Unknown; 194°F

Specimen Thickness: 3.2 in.

Specimen Width: NA





# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

Condition/Ht: -0-

Form: RPV Base Metal

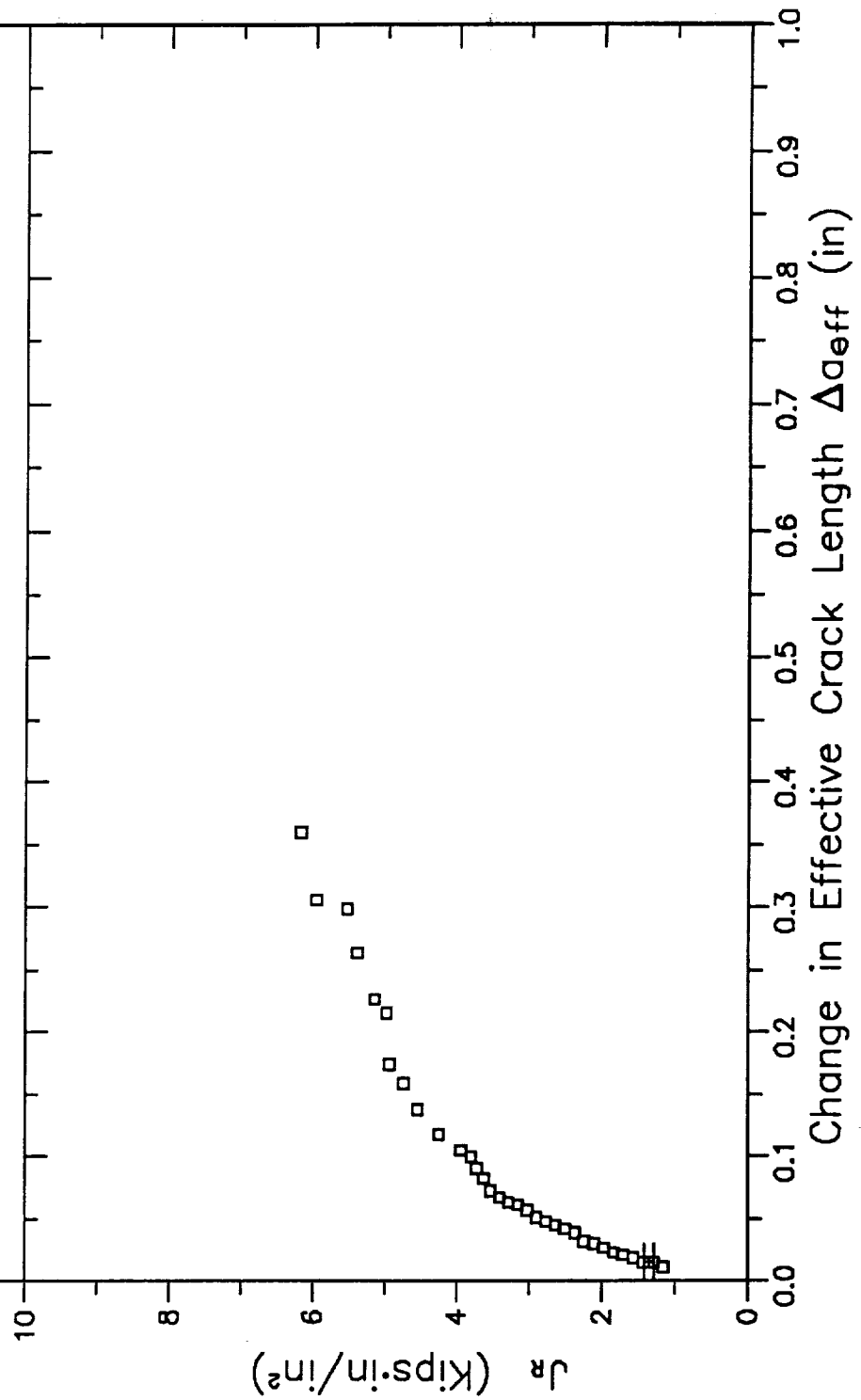
Kc: NA

Reference: NRC04

Environment: Unknown; 199.4°F

Specimen Thickness: 0.8 in.

Specimen Width: NA

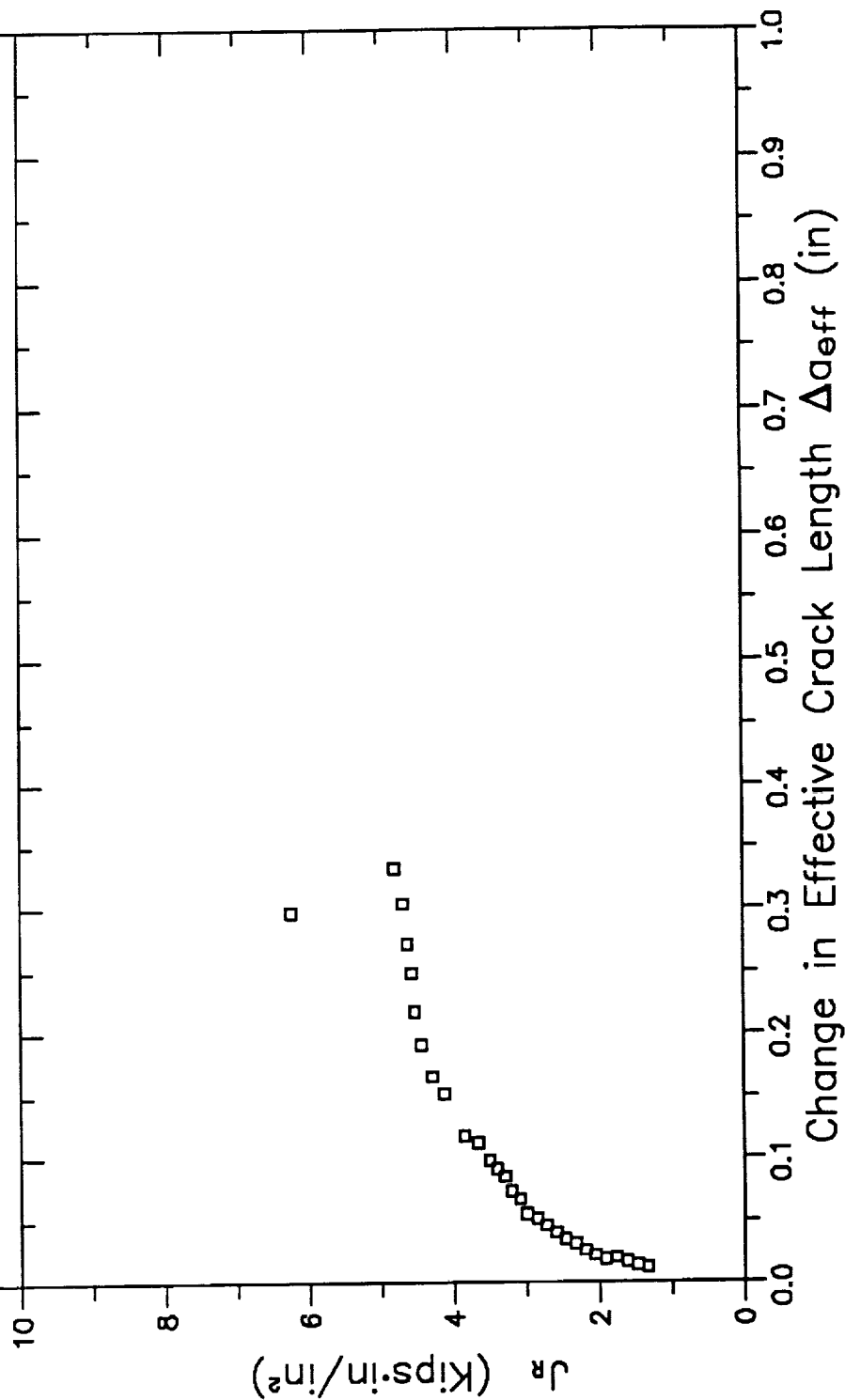


# RESISTANCE CURVE

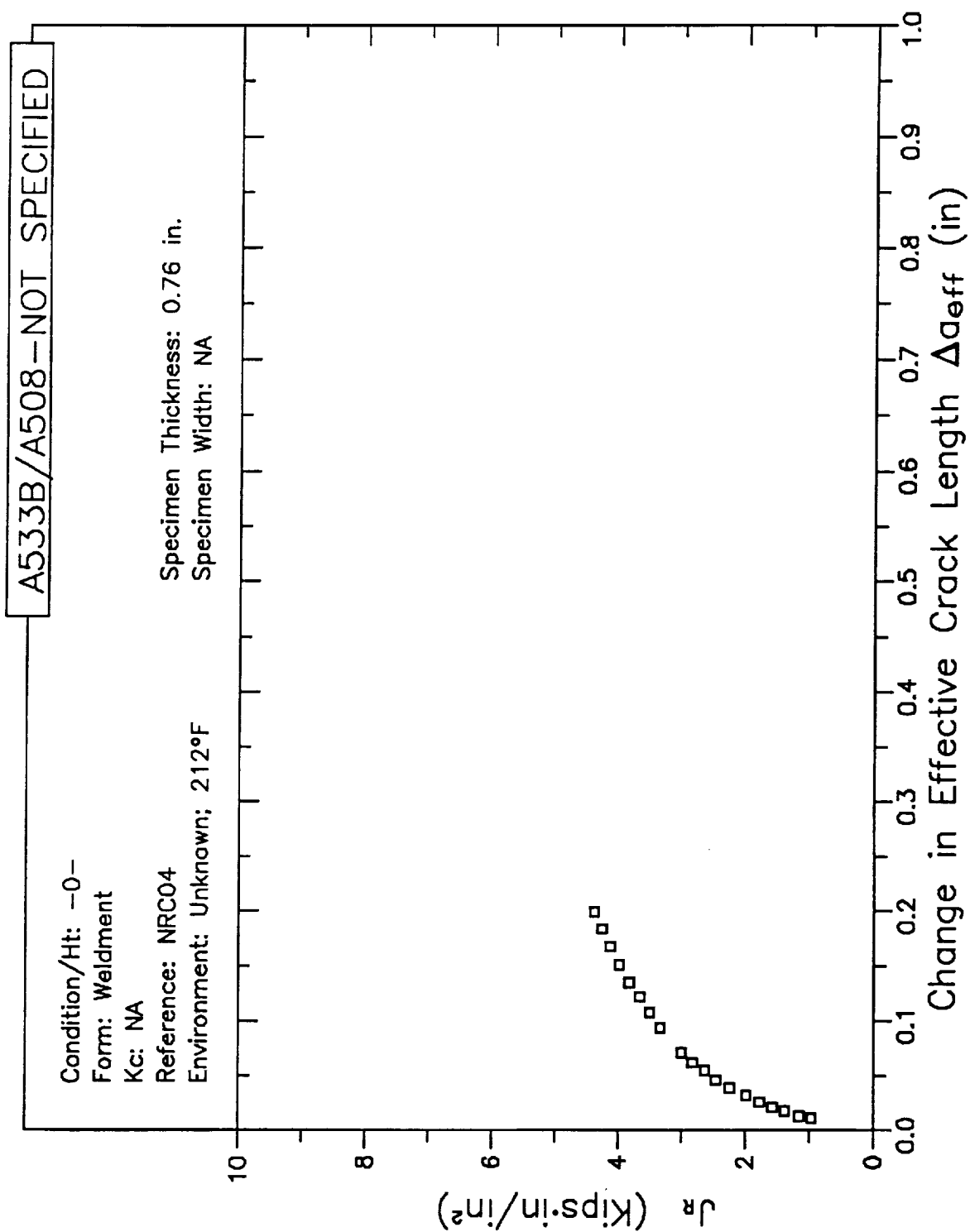
A533B/A508—NOT SPECIFIED

Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 199.4°F

Specimen Thickness: 0.8 in.  
Specimen Width: NA



# RESISTANCE CURVE

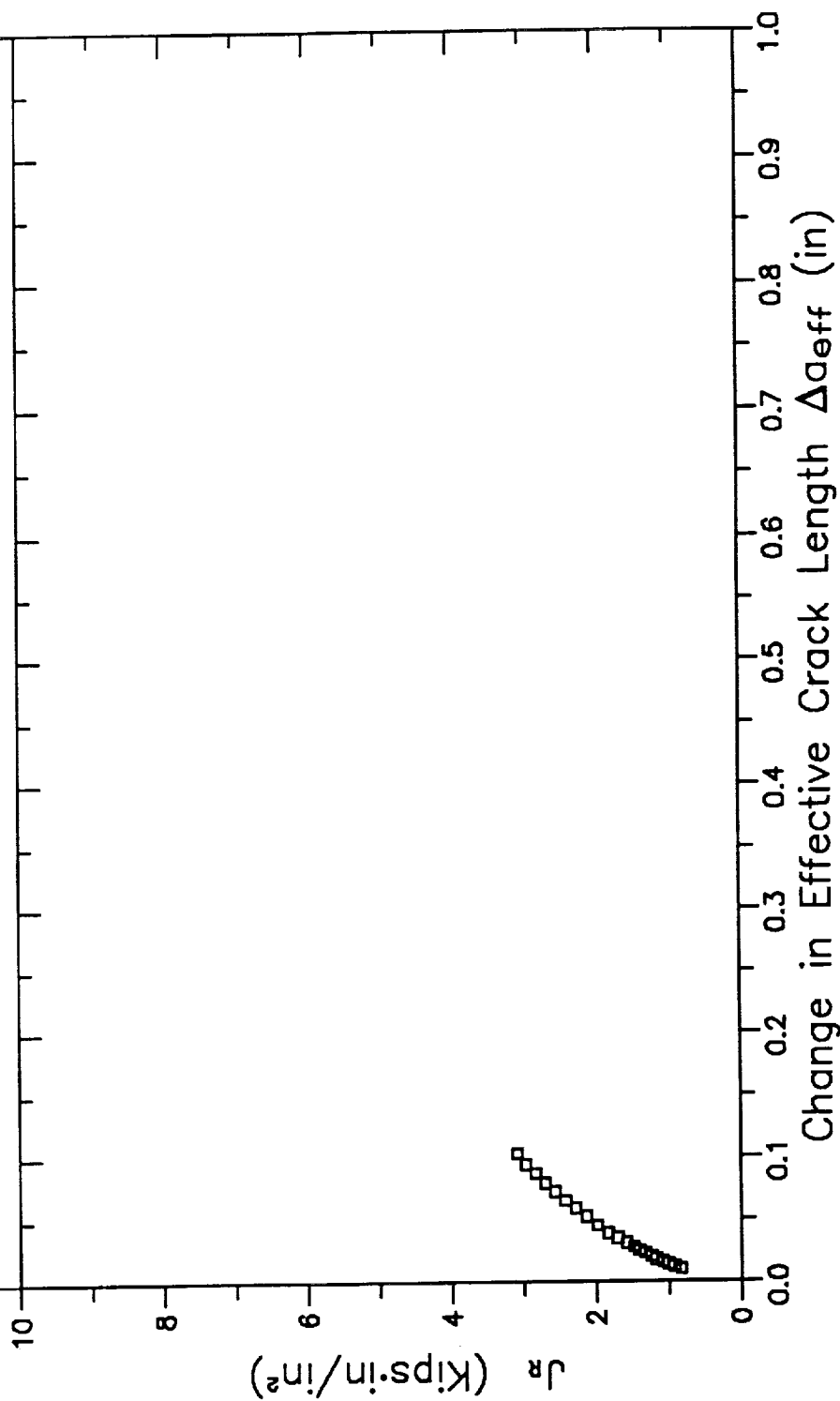


# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

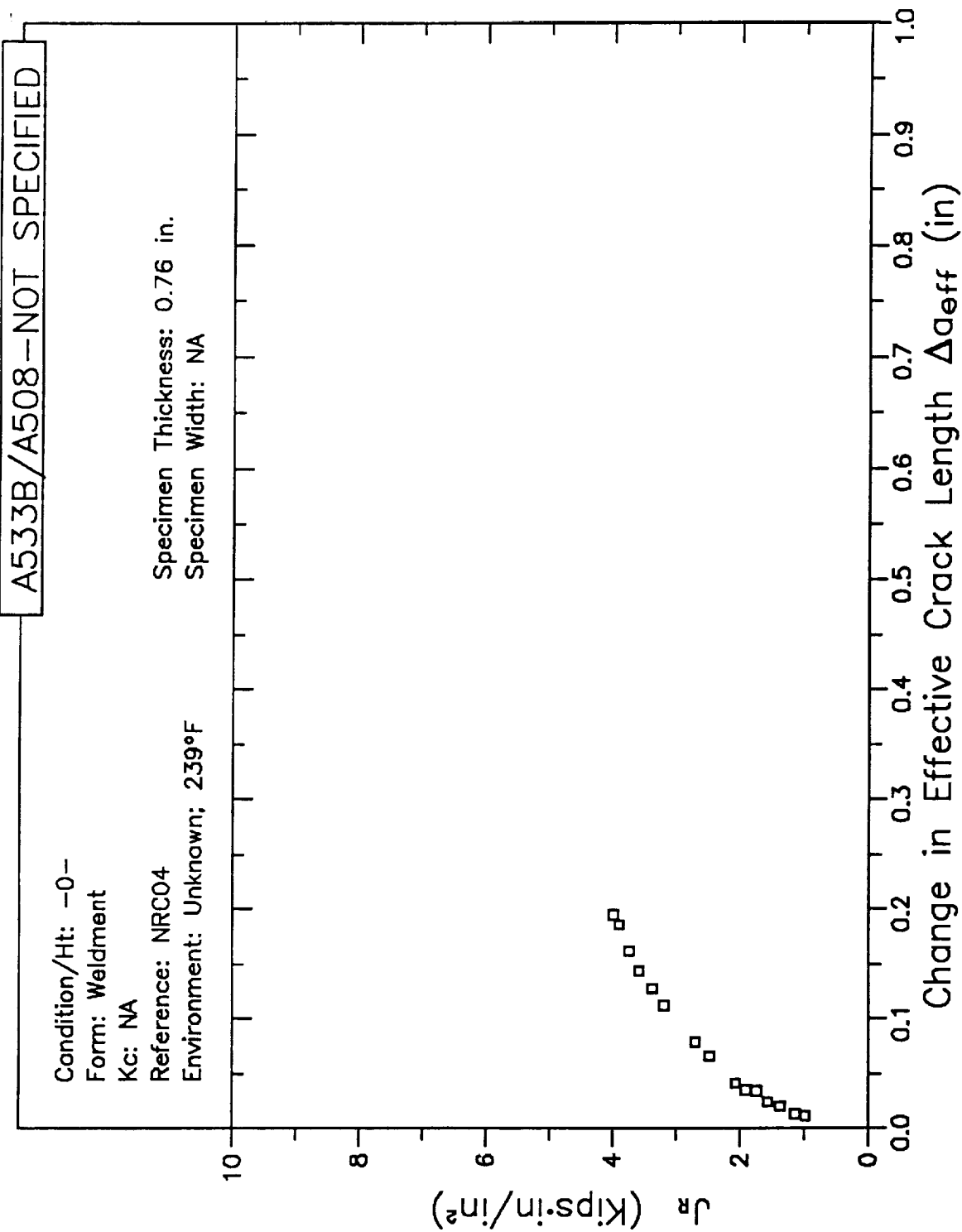
Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 212°F

Specimen Thickness: 0.8 in.  
Specimen Width: NA



B3-108

# RESISTANCE CURVE



# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

Condition/Ht: -0-

Form: RPV Base Metal

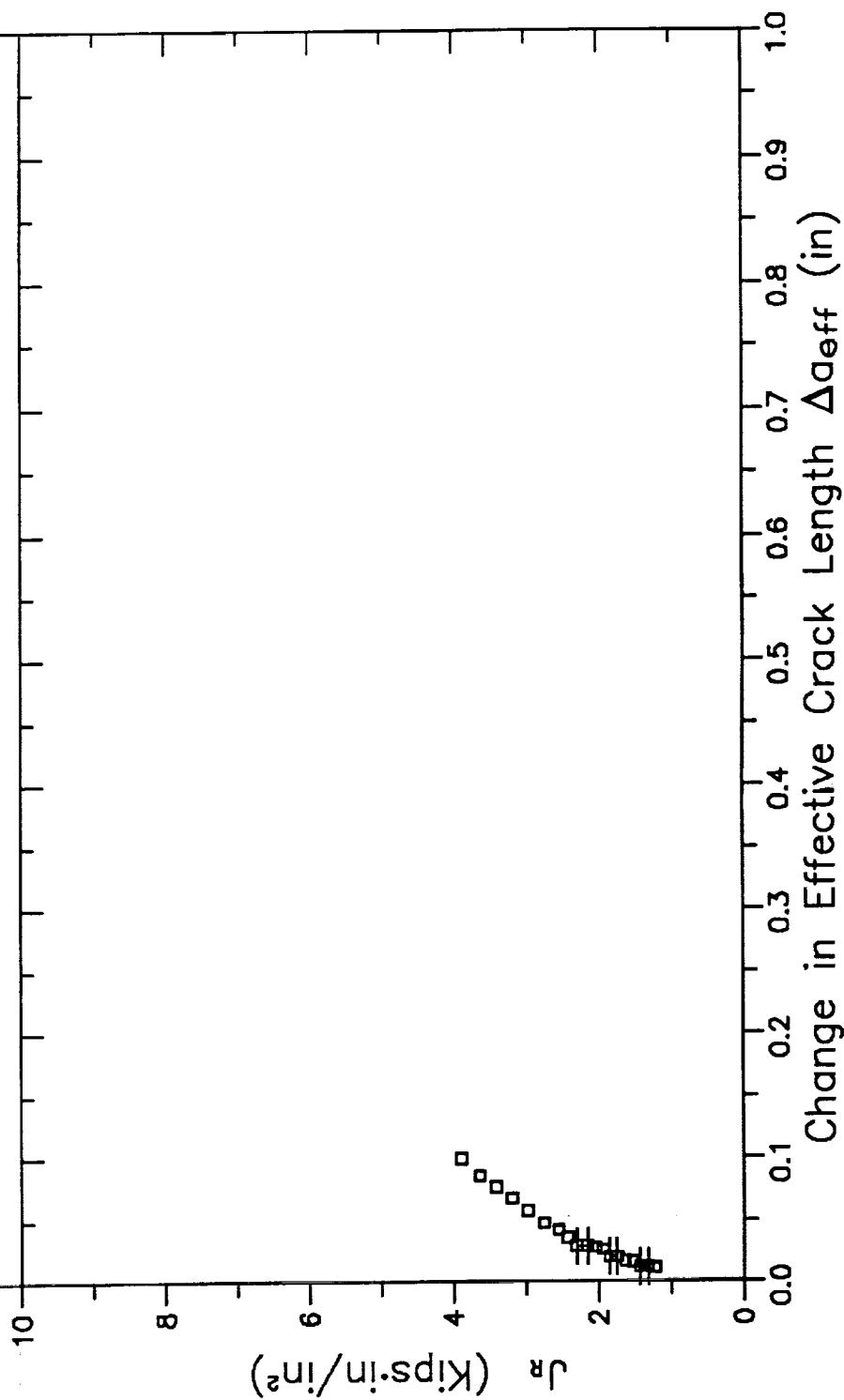
Kc: NA

Reference: NRC04

Environment: Unknown; 248°F

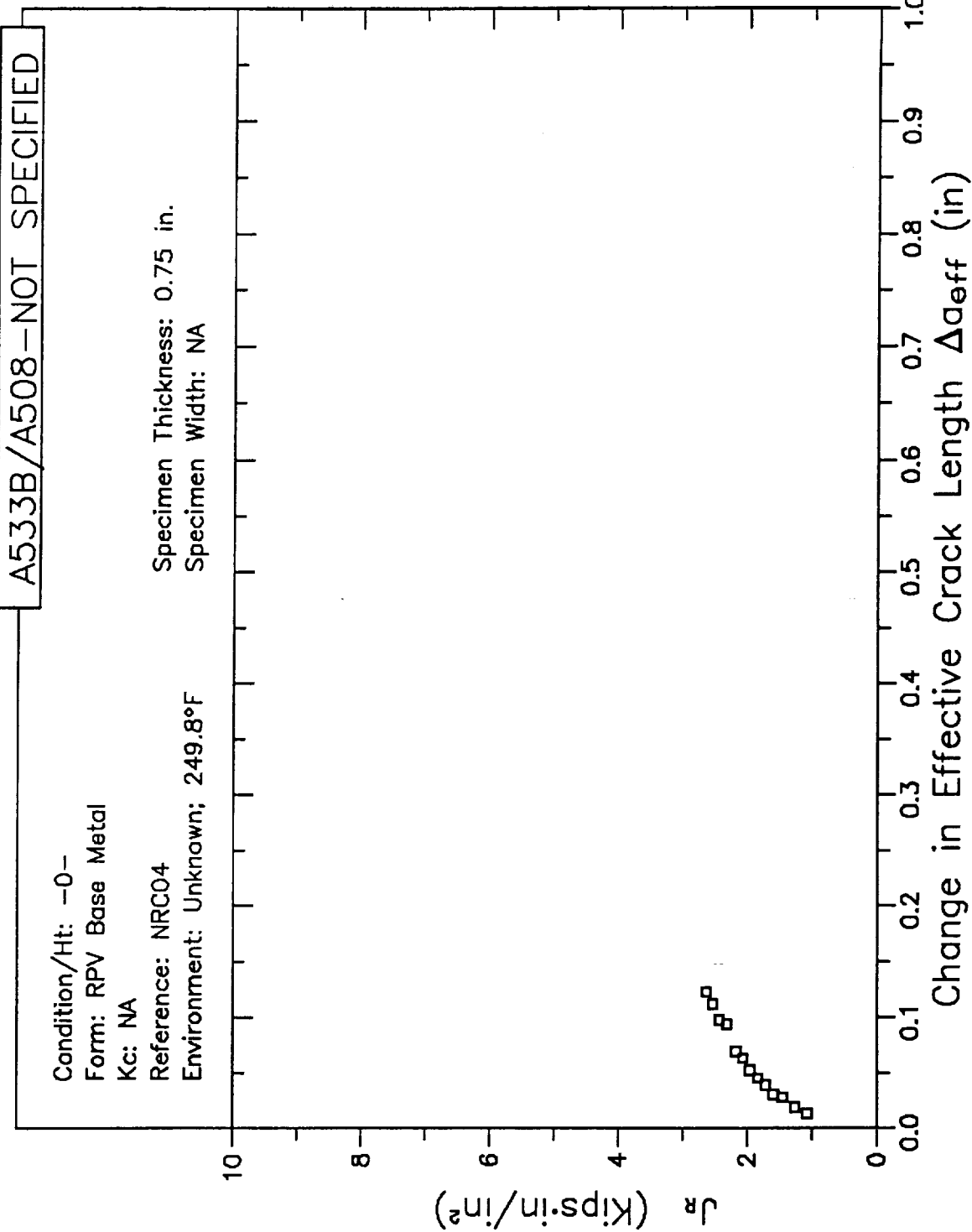
Specimen Thickness: 0.8 in.

Specimen Width: NA



B3-110

# RESISTANCE CURVE



# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

Condition/Ht: -0-

Form: RPV Base Metal

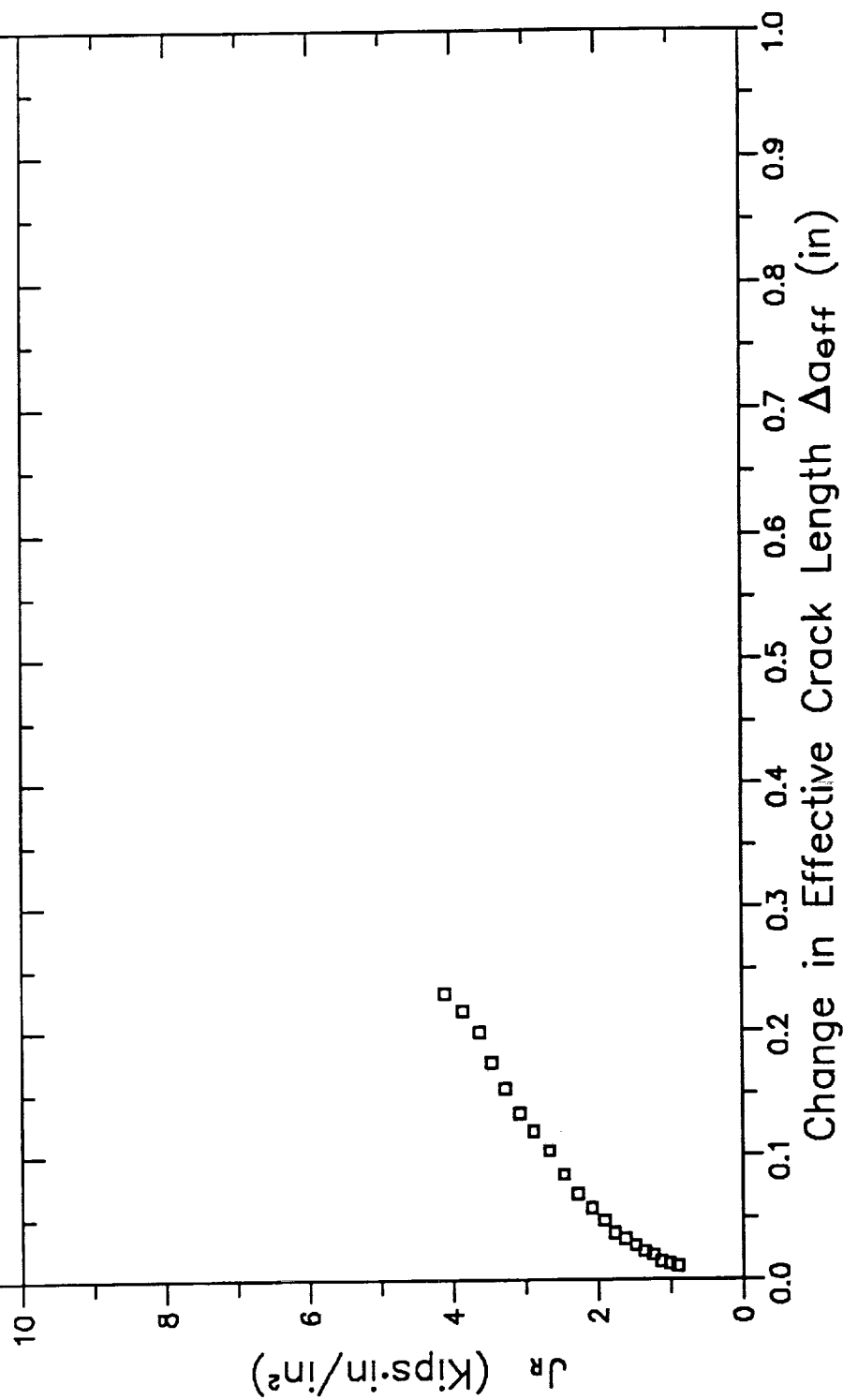
Kc: NA

Reference: NRC04

Environment: Unknown; 249.8°F

Specimen Thickness: 0.8 in.

Specimen Width: NA



B3-112

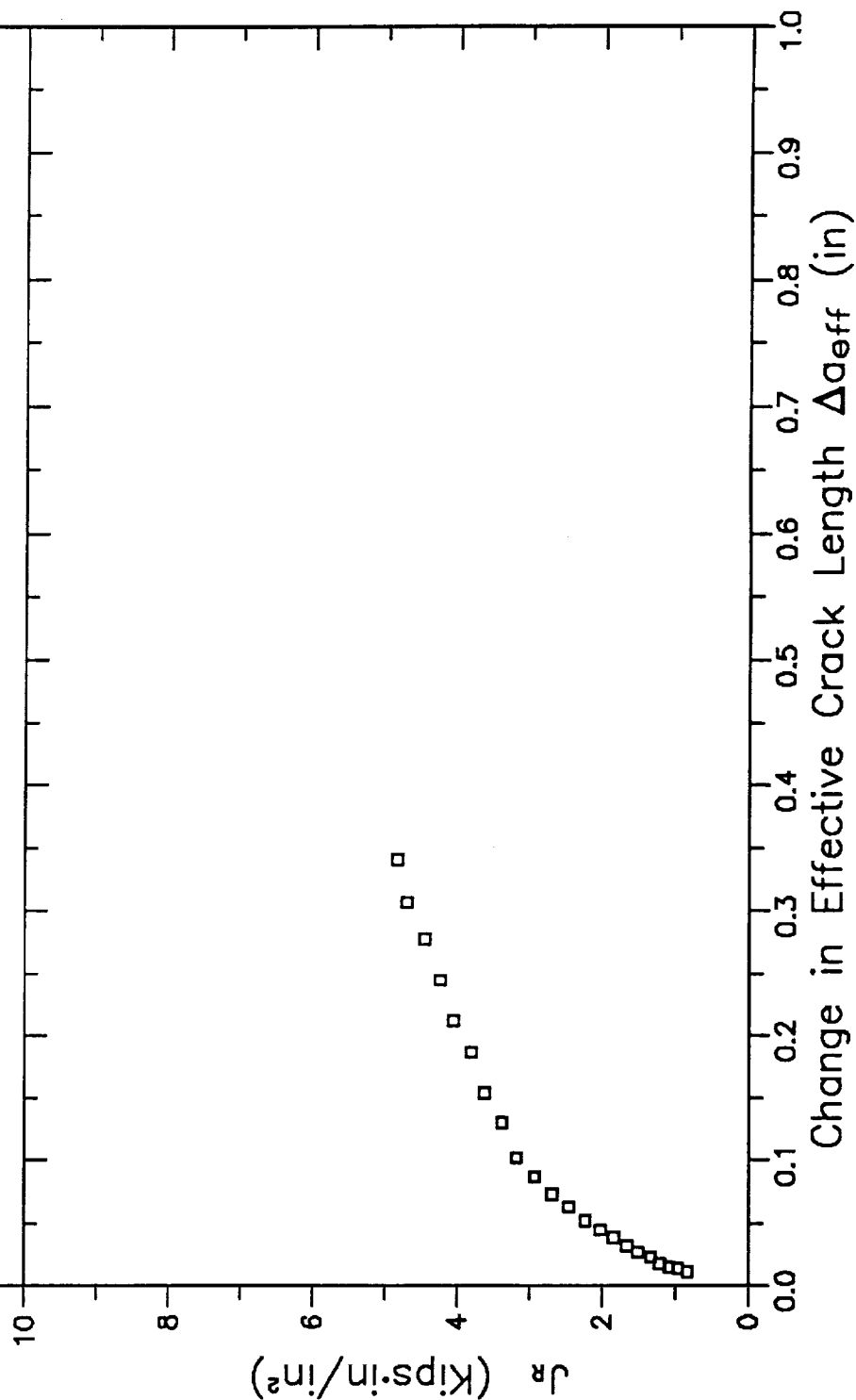


# RESISTANCE CURVE

A533B/A508 - NOT SPECIFIED

Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 249.8°F

Specimen Thickness: 0.8 in.  
Specimen Width: NA



B3-113

C-8

# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

Condition/Ht: -0-

Form: RPV Base Metal

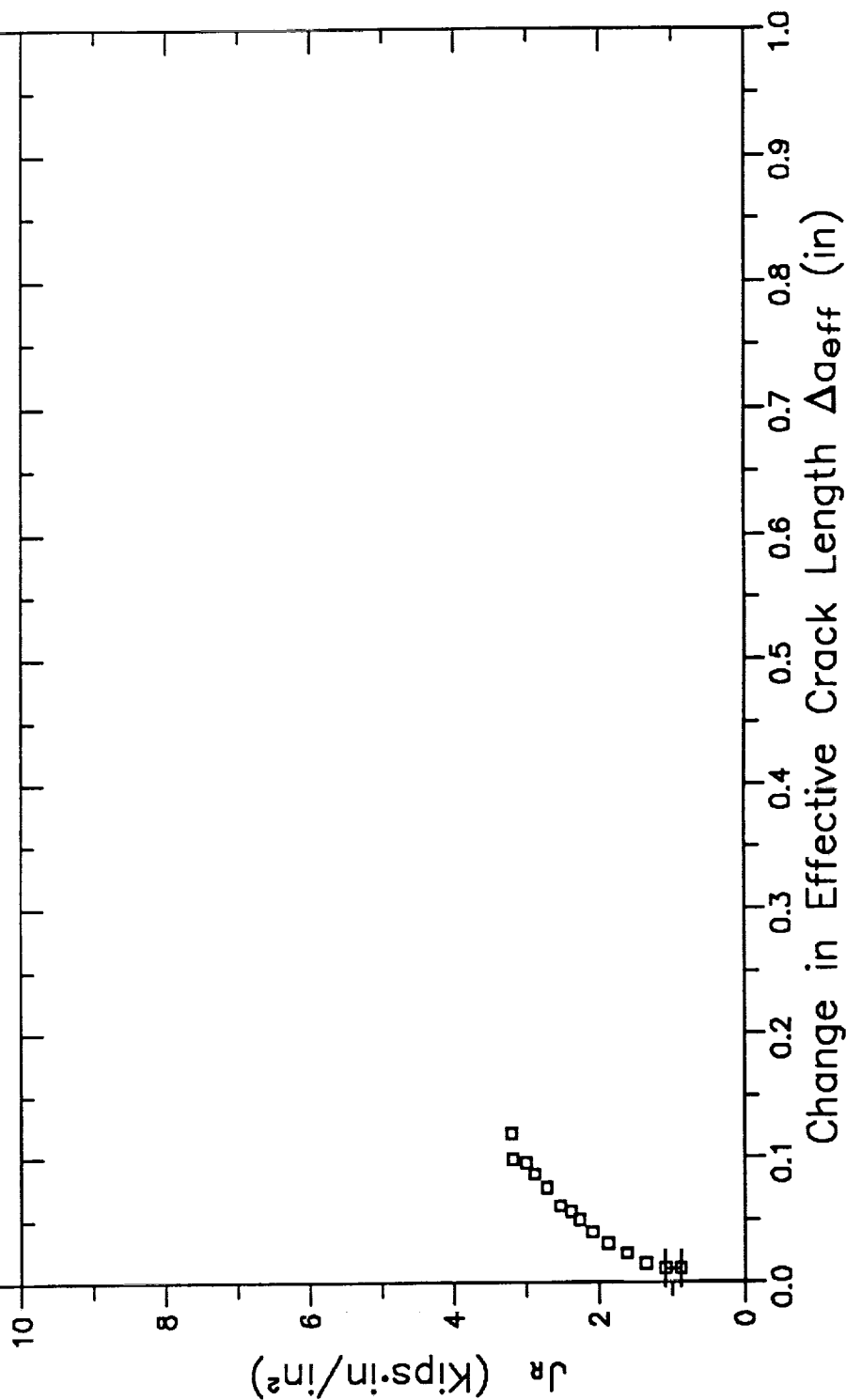
Kc: NA

Reference: NRC04

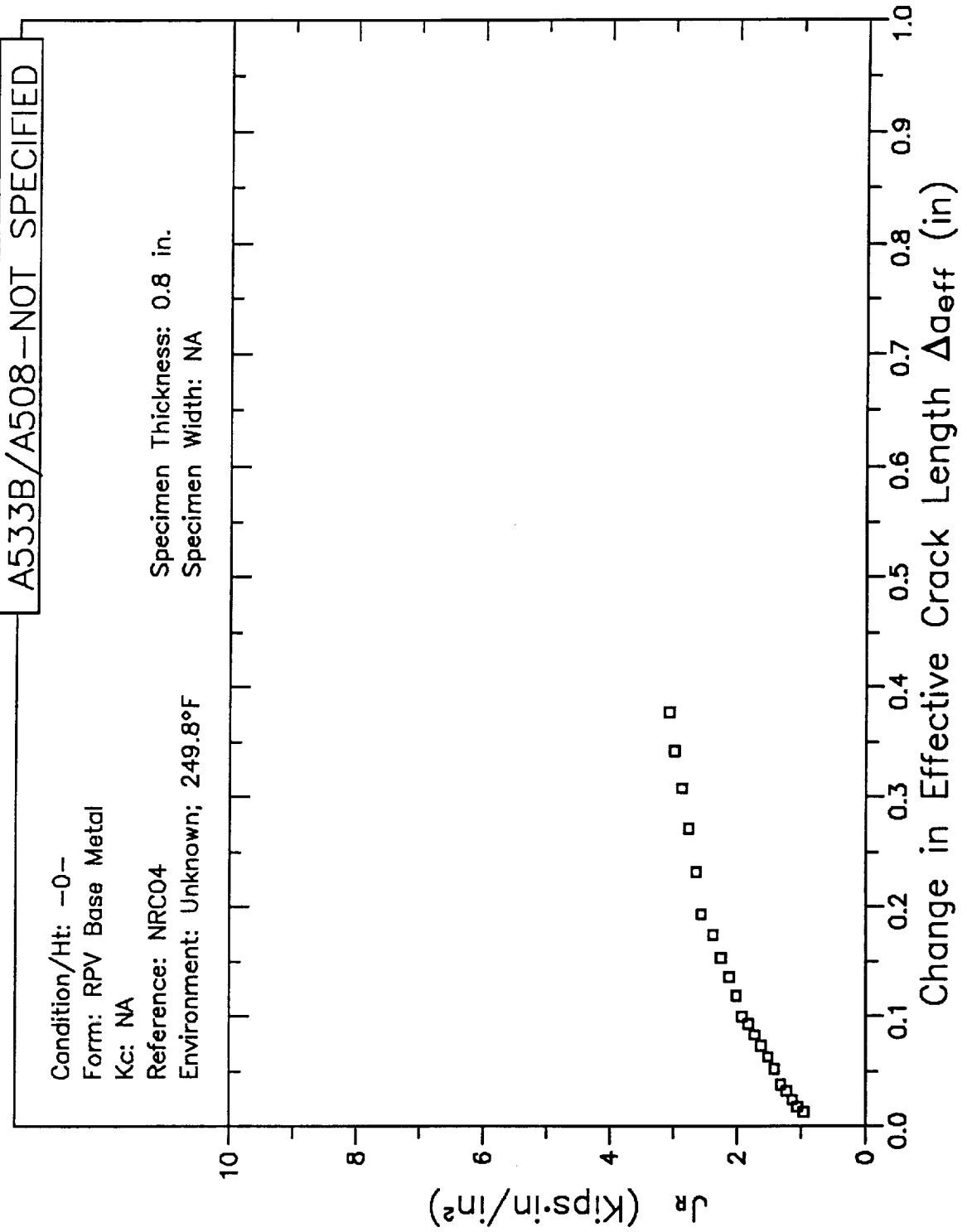
Environment: Unknown; 249.8°F

Specimen Thickness: 0.8 in.

Specimen Width: NA



# RESISTANCE CURVE



# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

Condition/Ht: -0-

Form: RPV Base Metal

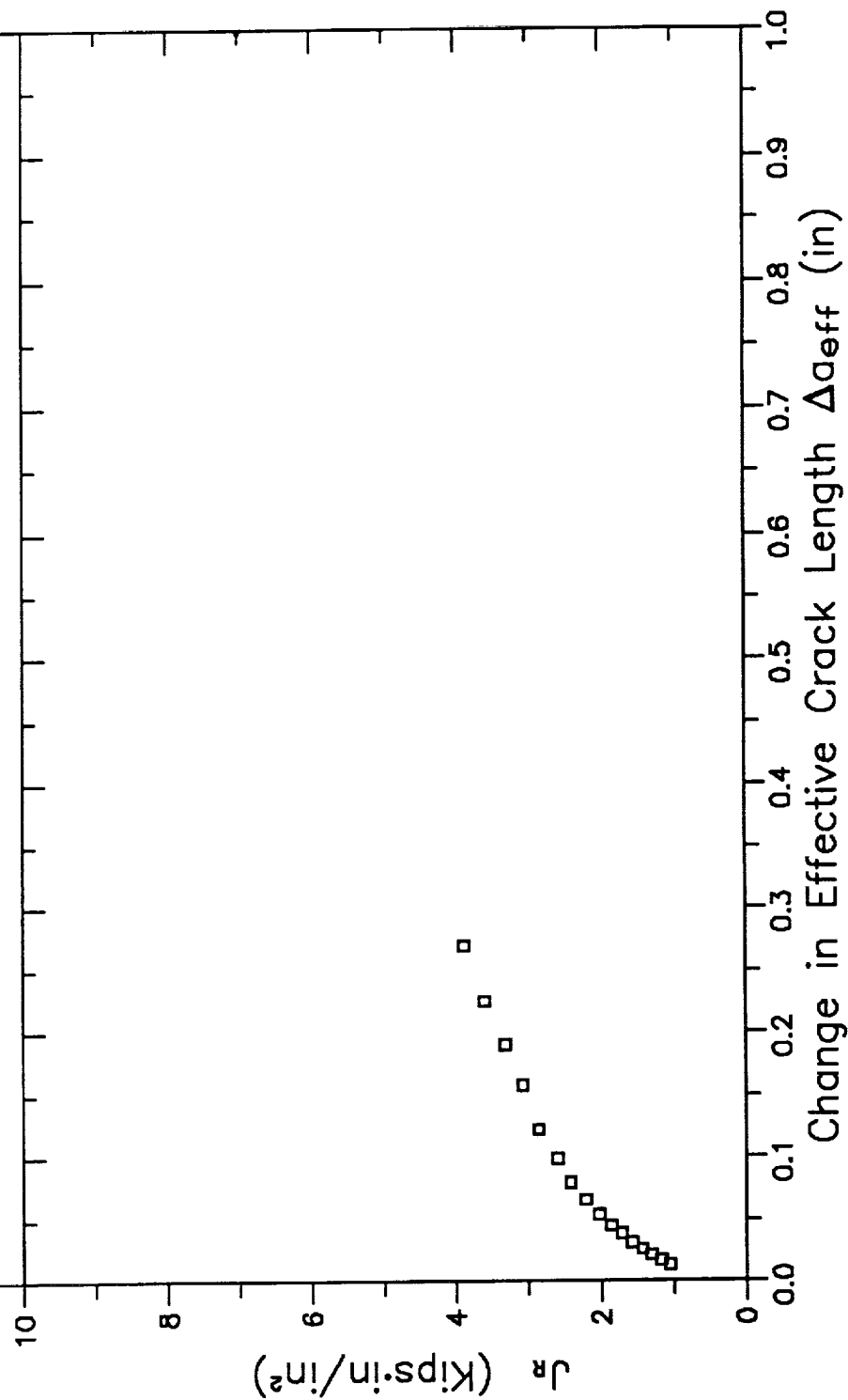
Kc: NA

Reference: NRC04

Environment: Unknown; 249.8°F

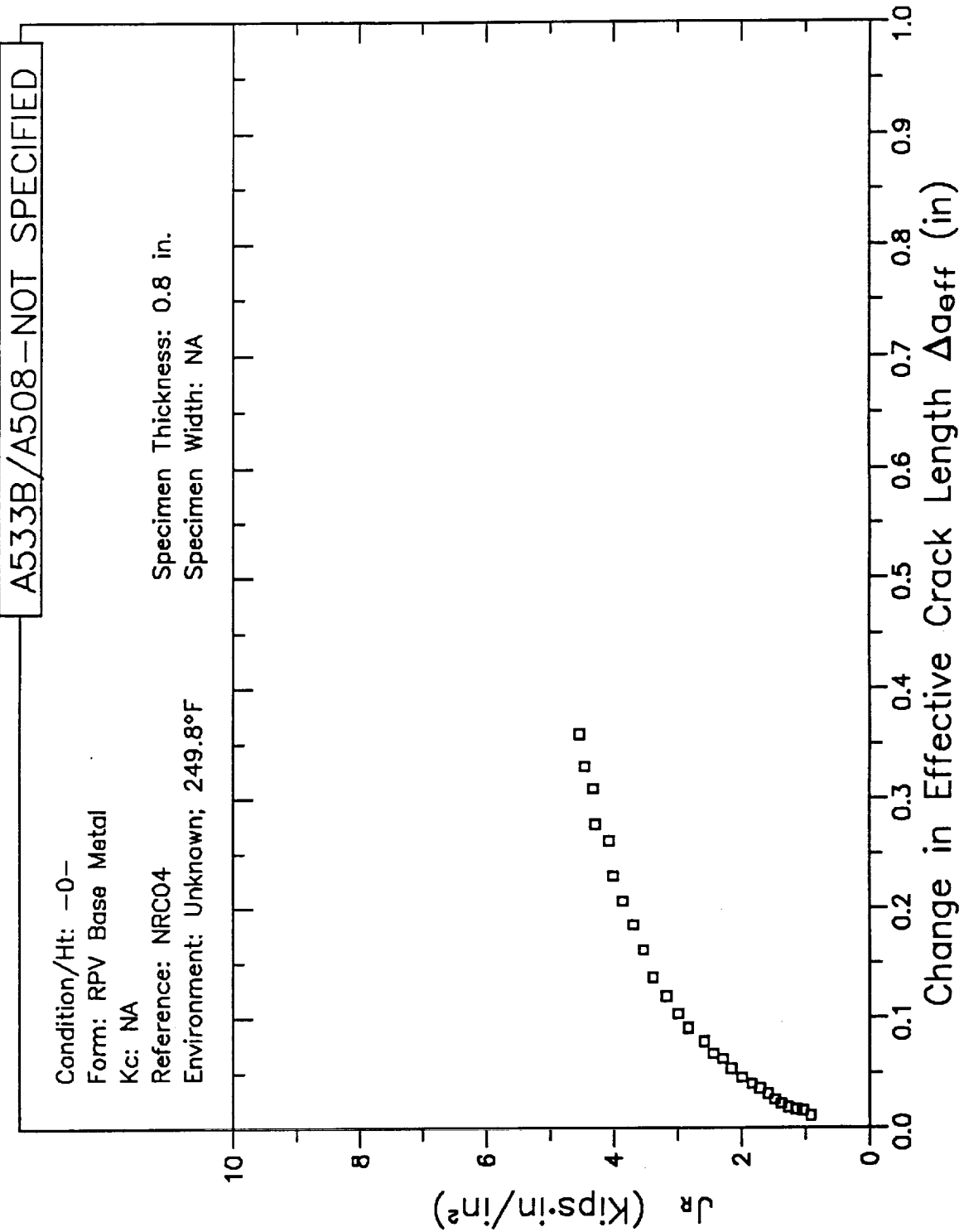
Specimen Thickness: 0.8 in.

Specimen Width: NA



B3-116

# RESISTANCE CURVE

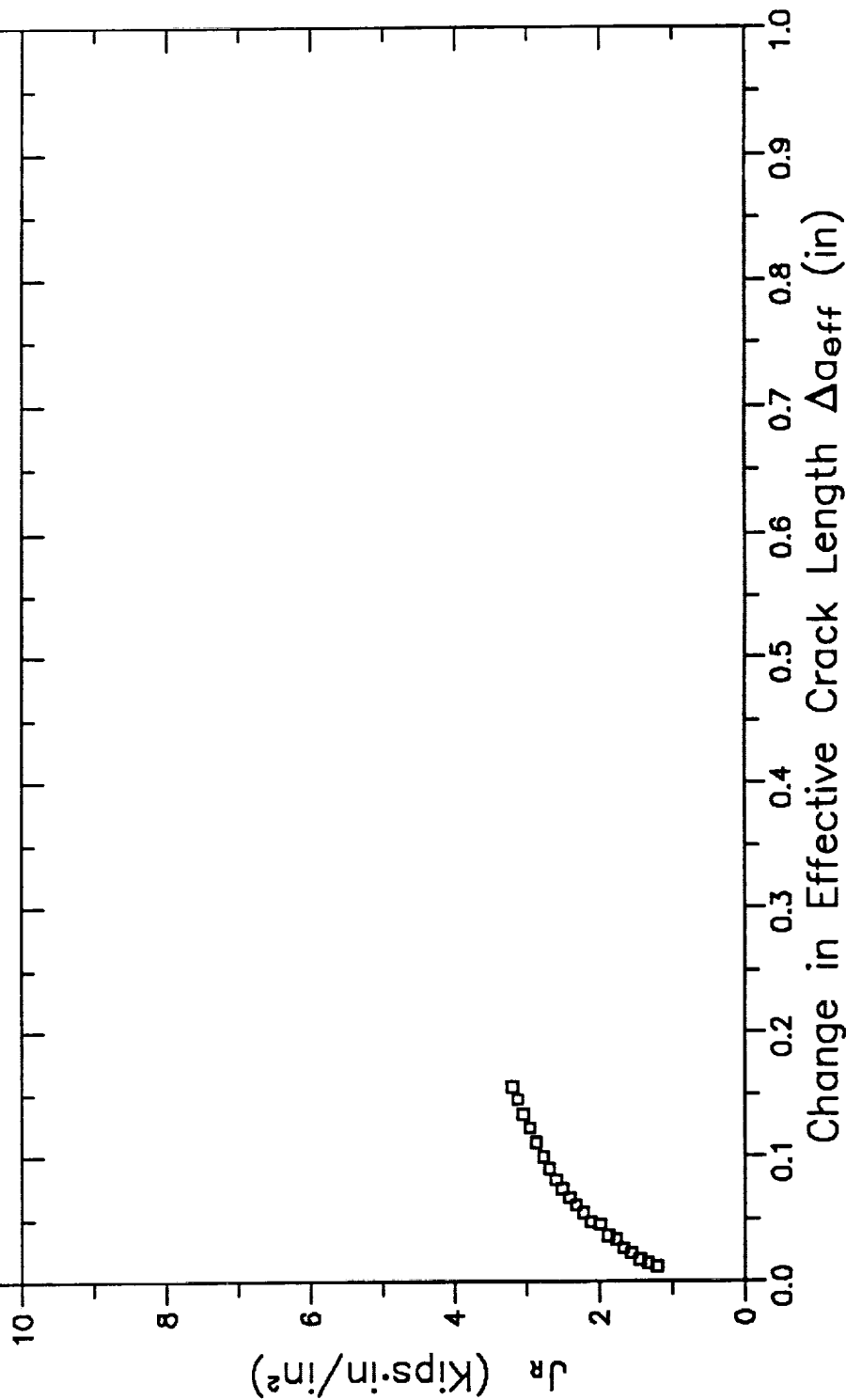


# RESISTANCE CURVE

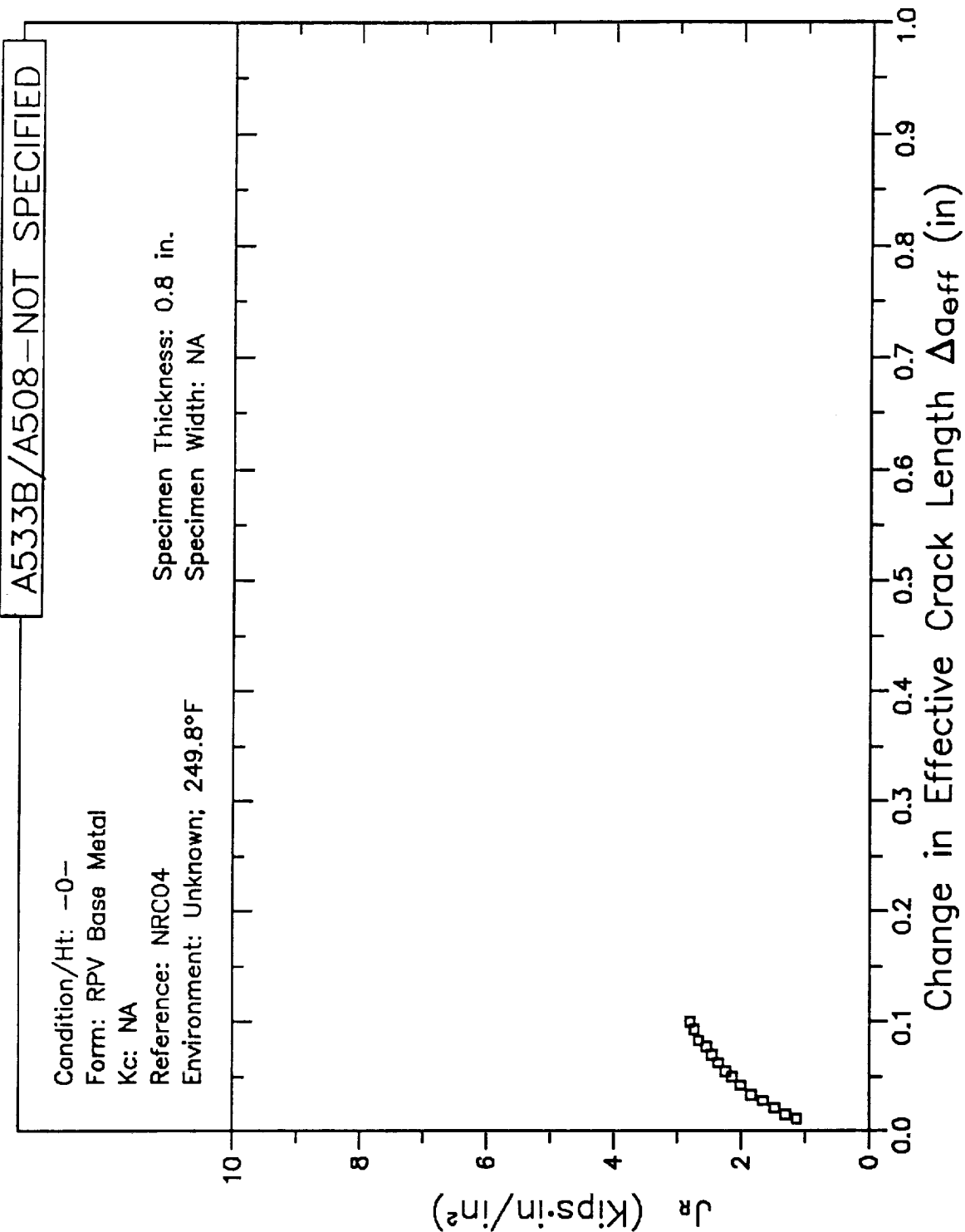
A533B/A508—NOT SPECIFIED

Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 249.8°F

Specimen Thickness: 0.8 in.  
Specimen Width: NA



# RESISTANCE CURVE

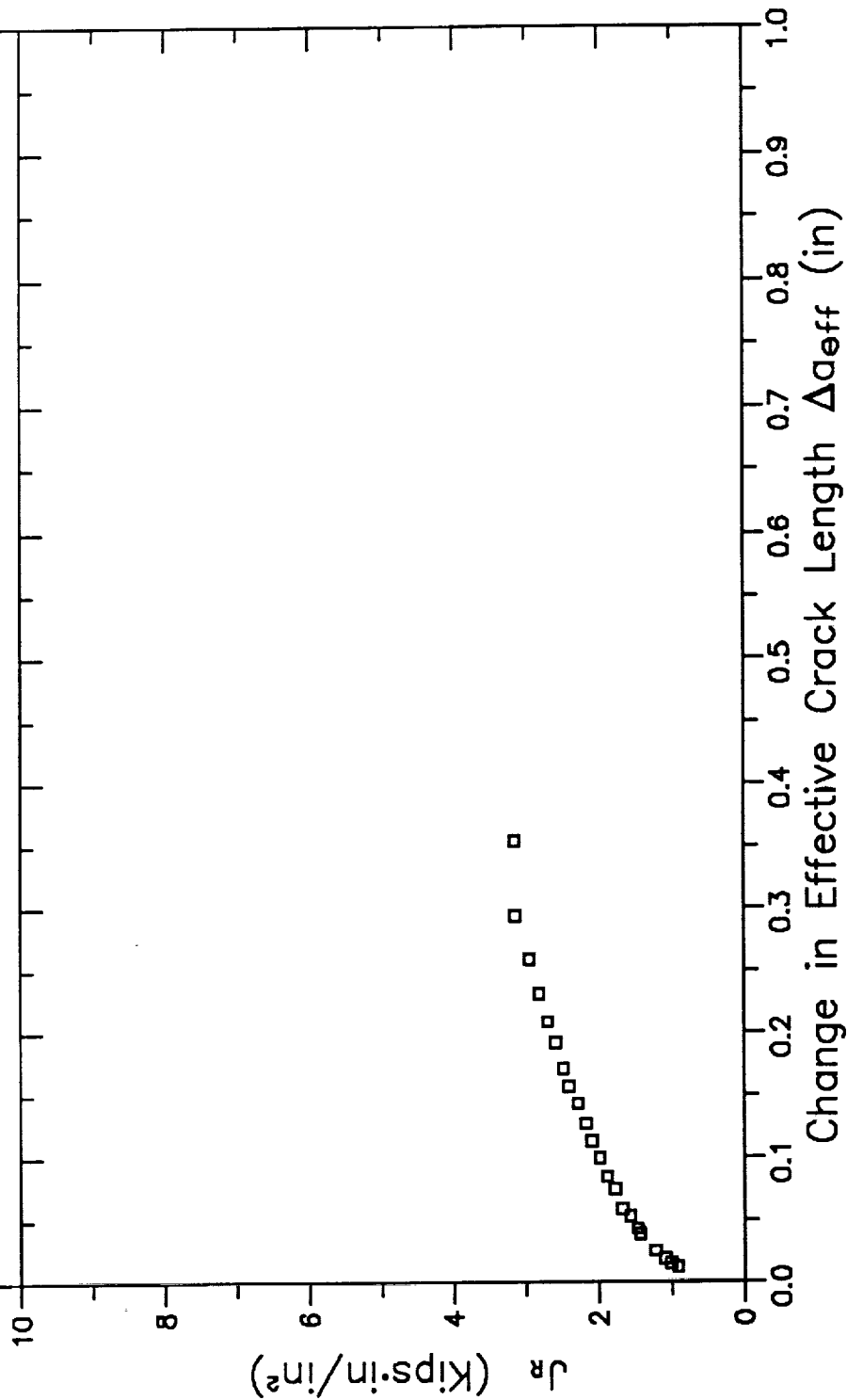


# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

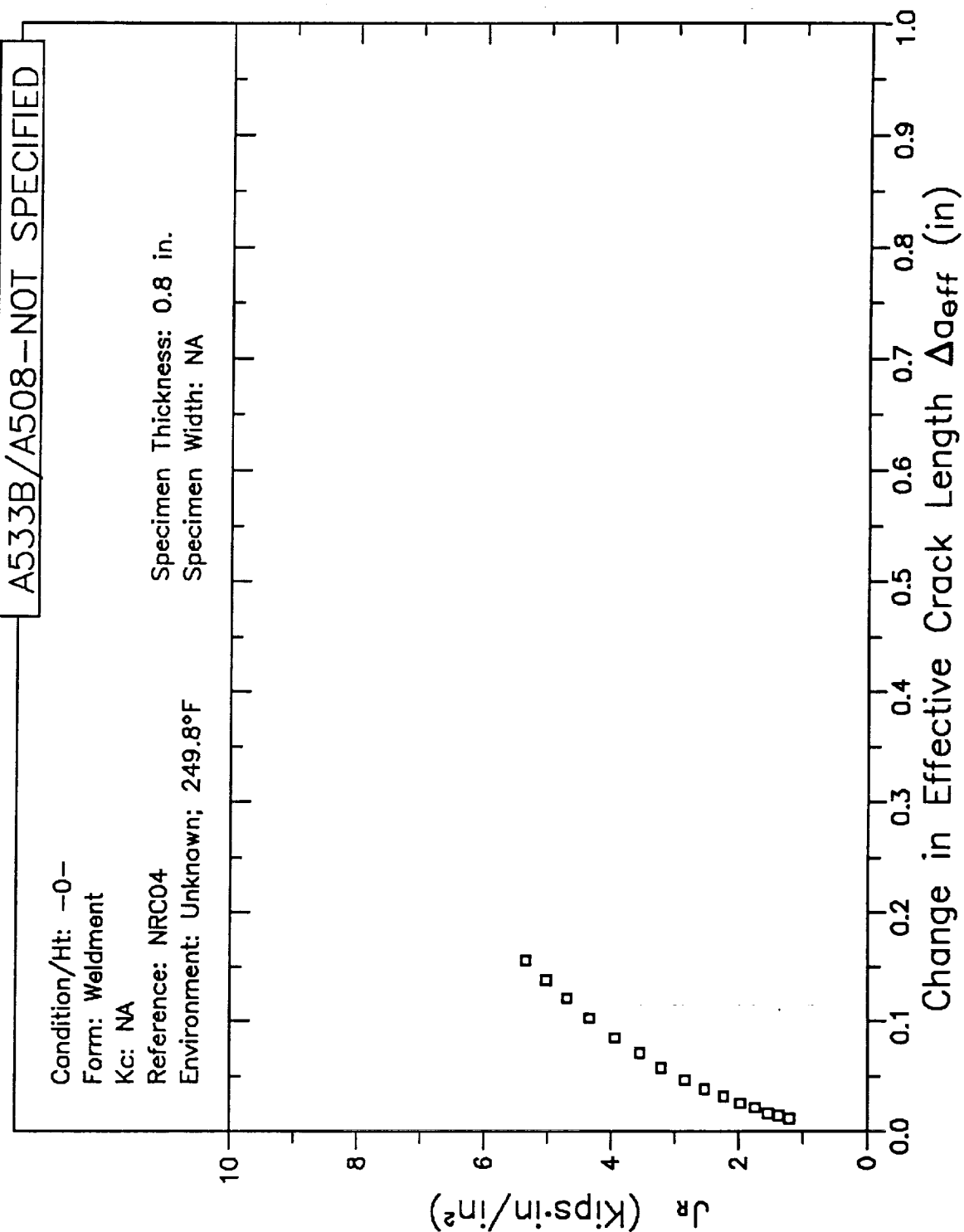
Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 249.8°F

Specimen Thickness: 0.8 in.  
Specimen Width: NA





# RESISTANCE CURVE

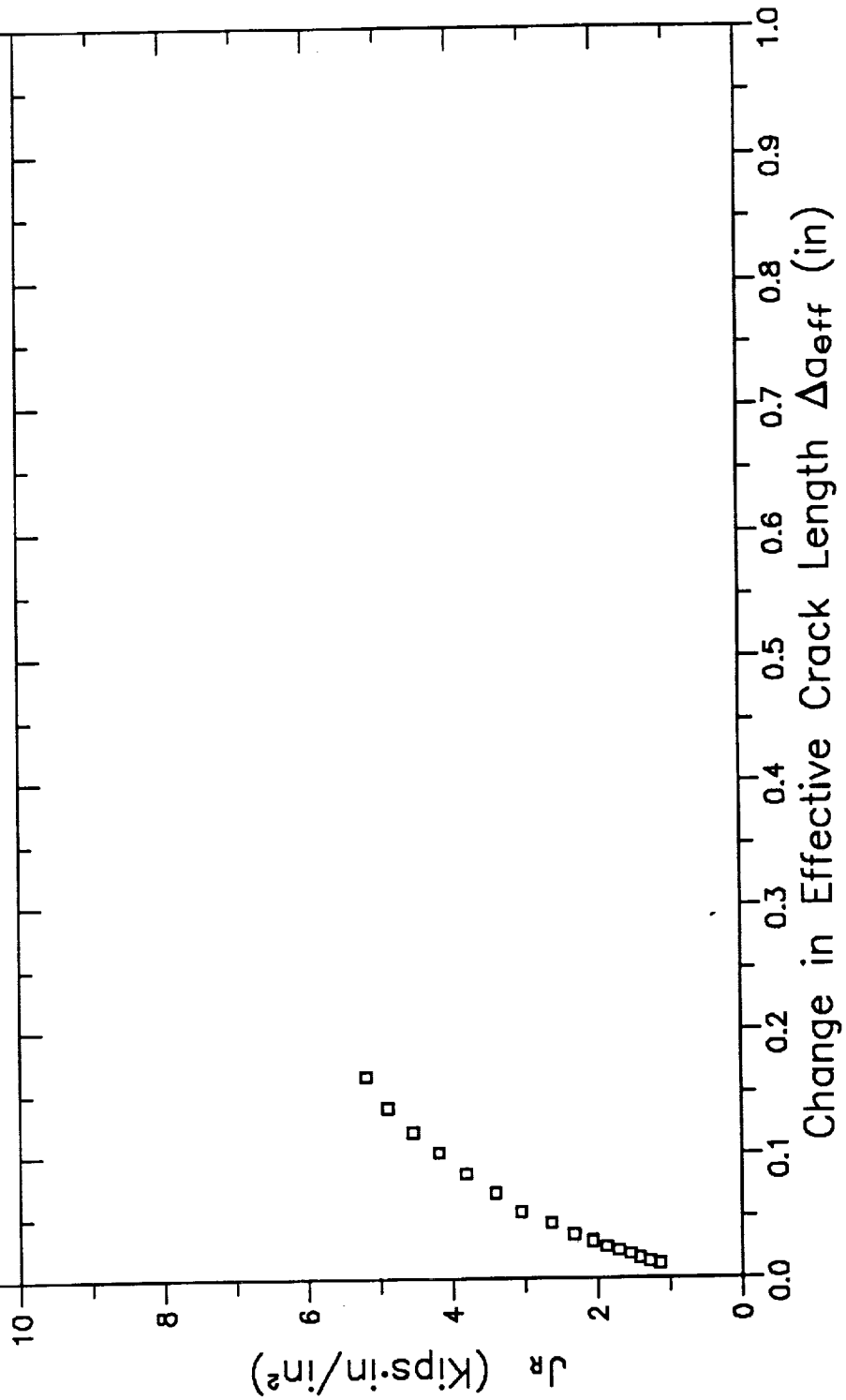


# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

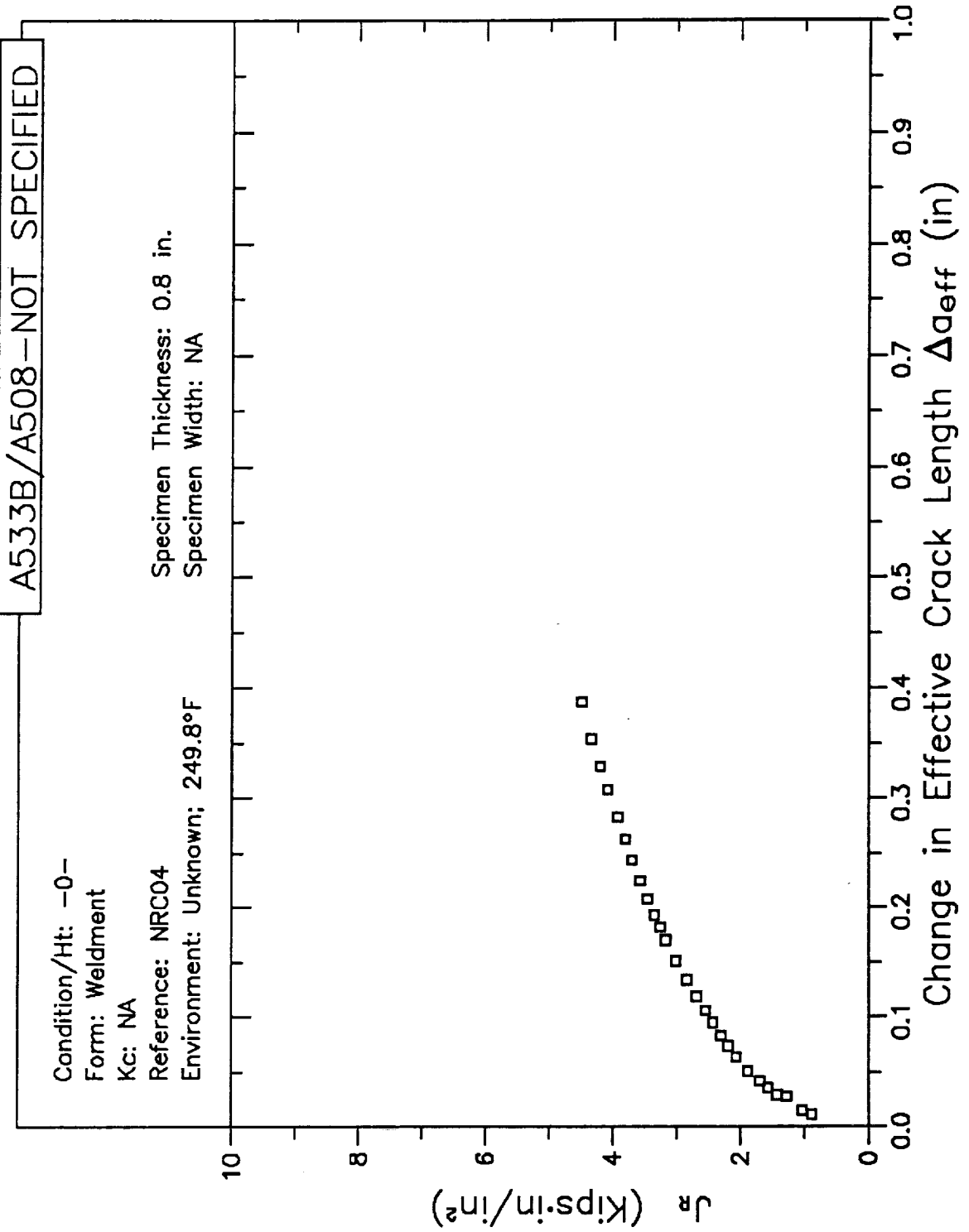
Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 249.8°F

Specimen Thickness: 0.8 in.  
Specimen Width: NA



B3-122

# RESISTANCE CURVE

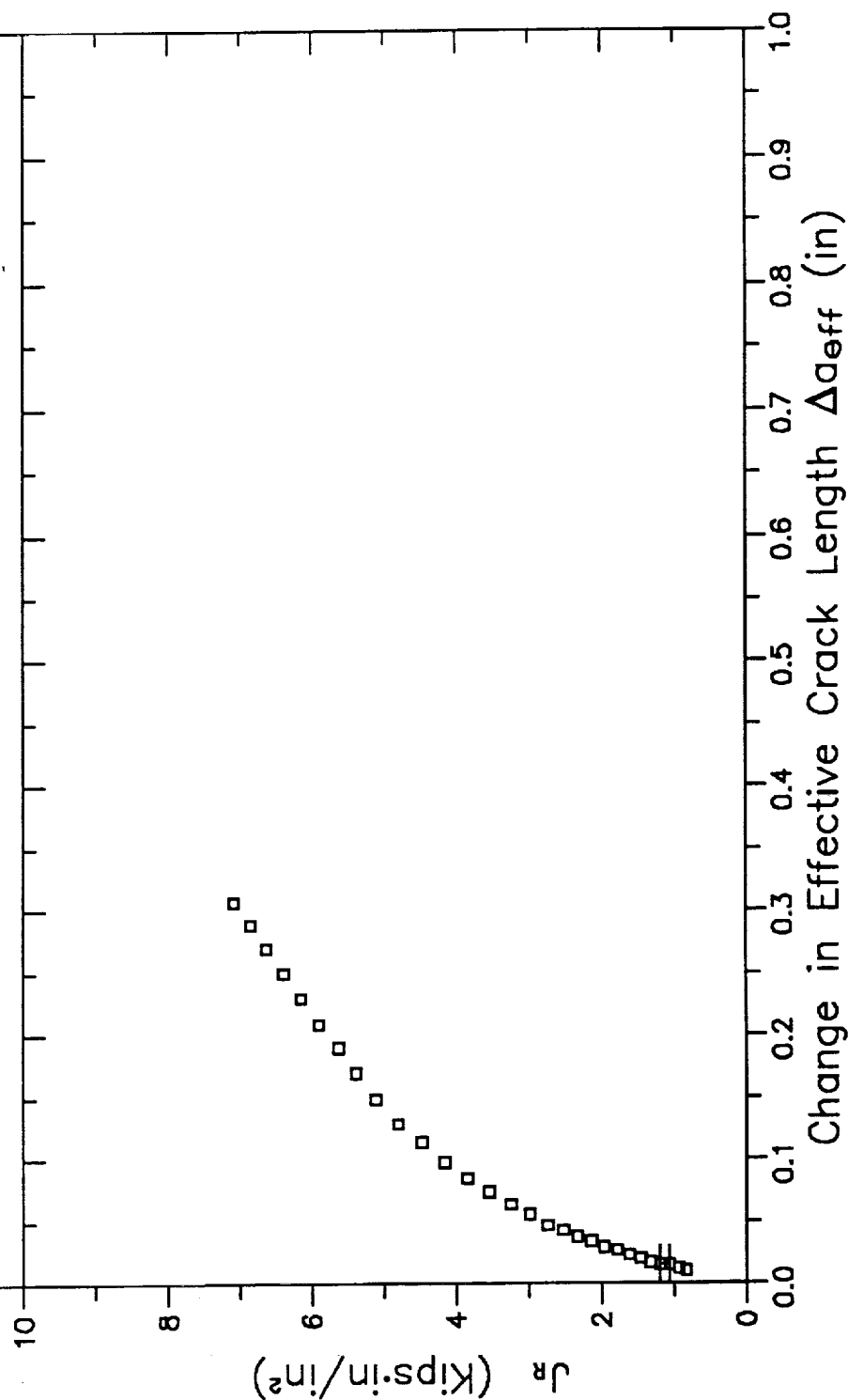


# RESISTANCE CURVE

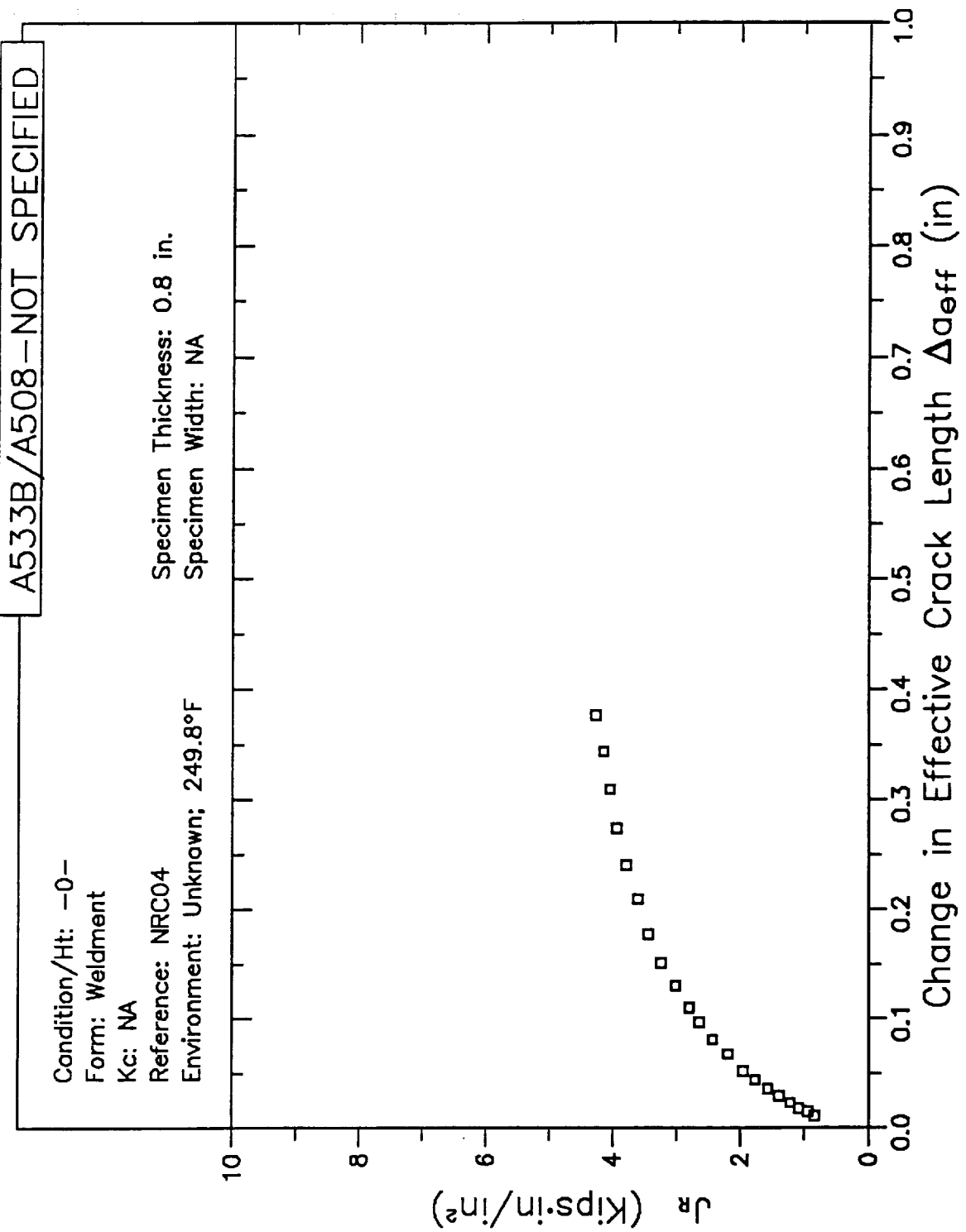
A533B/A508—NOT SPECIFIED

Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 249.8°F

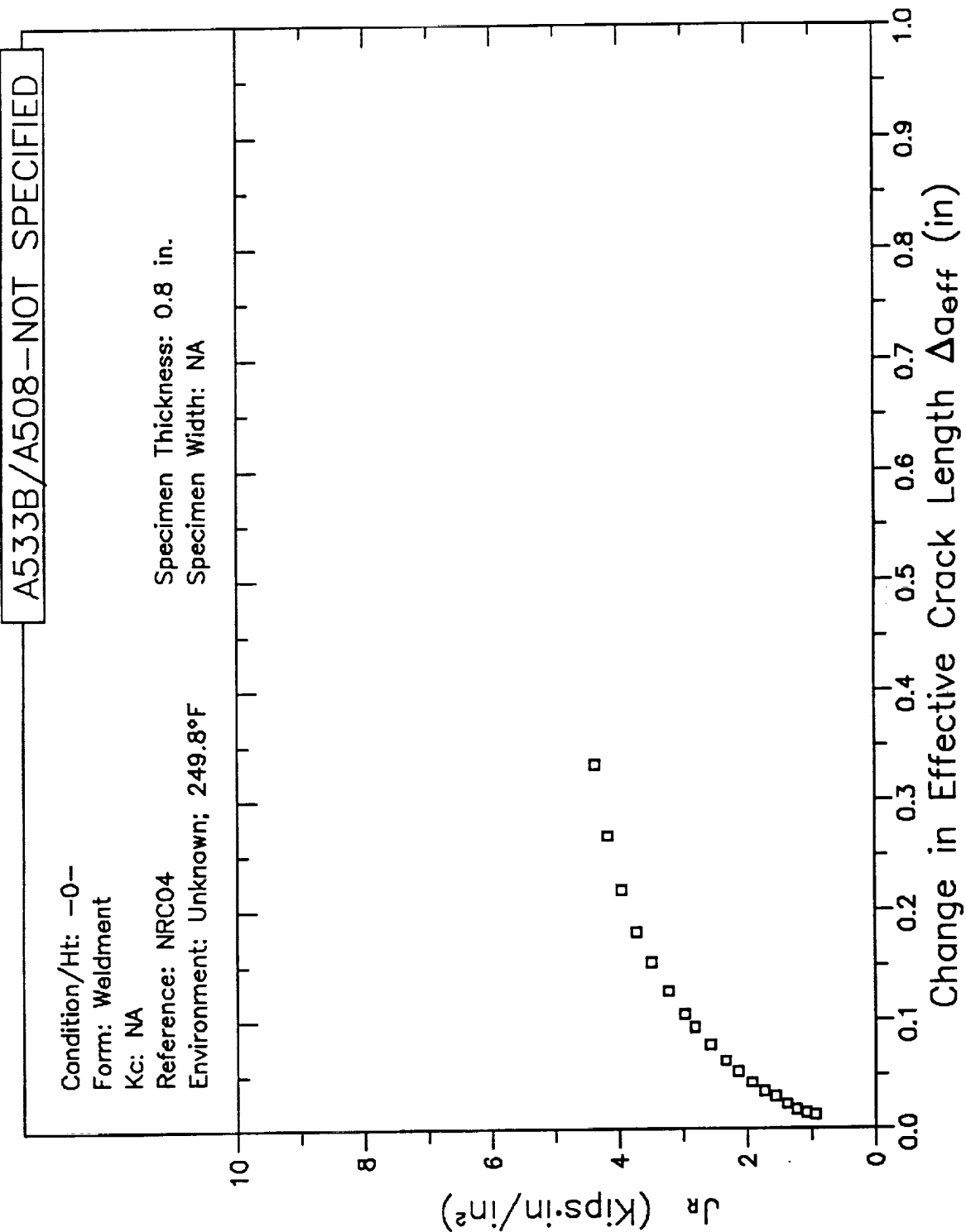
Specimen Thickness: 0.8 in.  
Specimen Width: NA



# RESISTANCE CURVE



# RESISTANCE CURVE

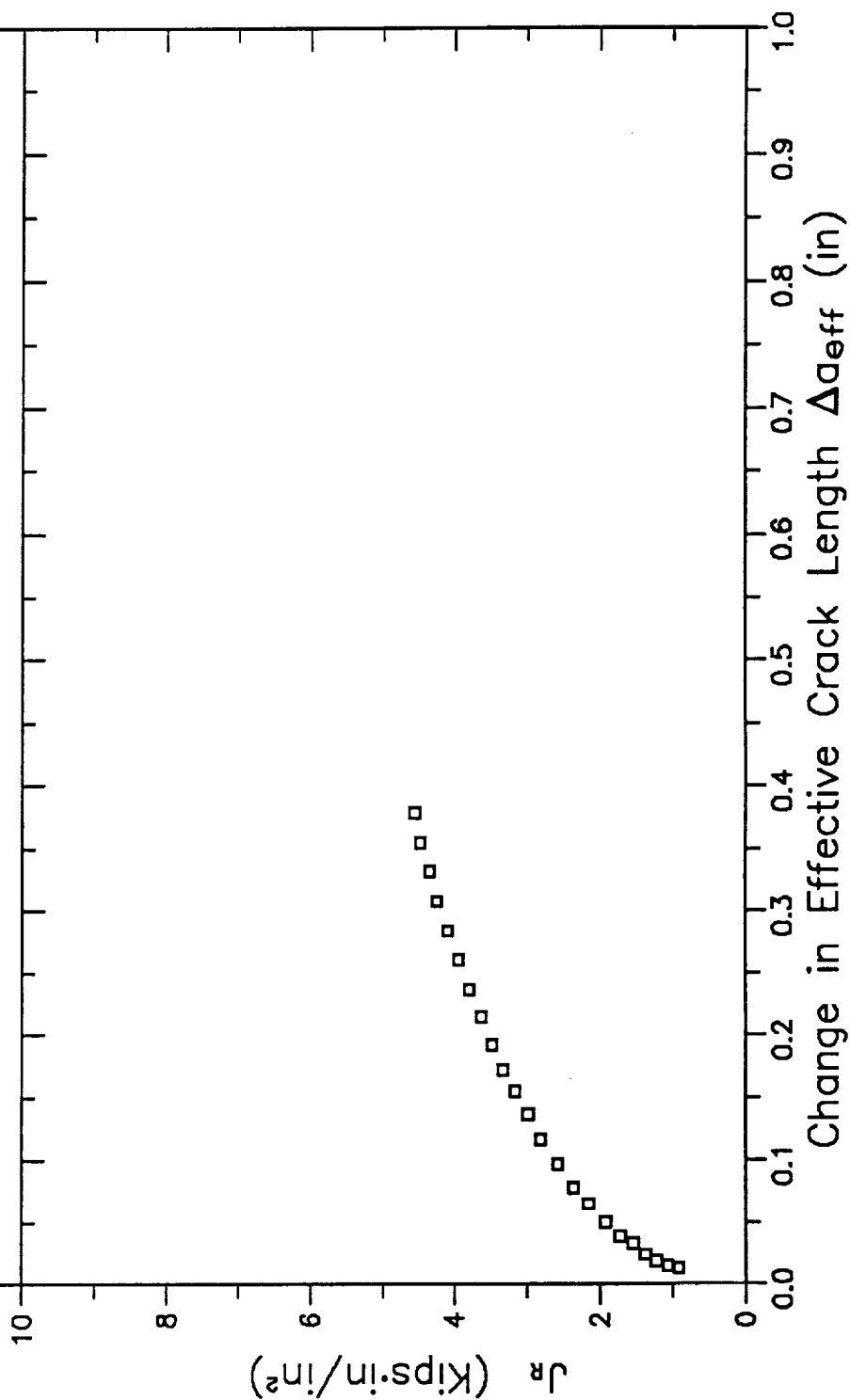


# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 249.8°F

Specimen Thickness: 0.8 in.  
Specimen Width: NA

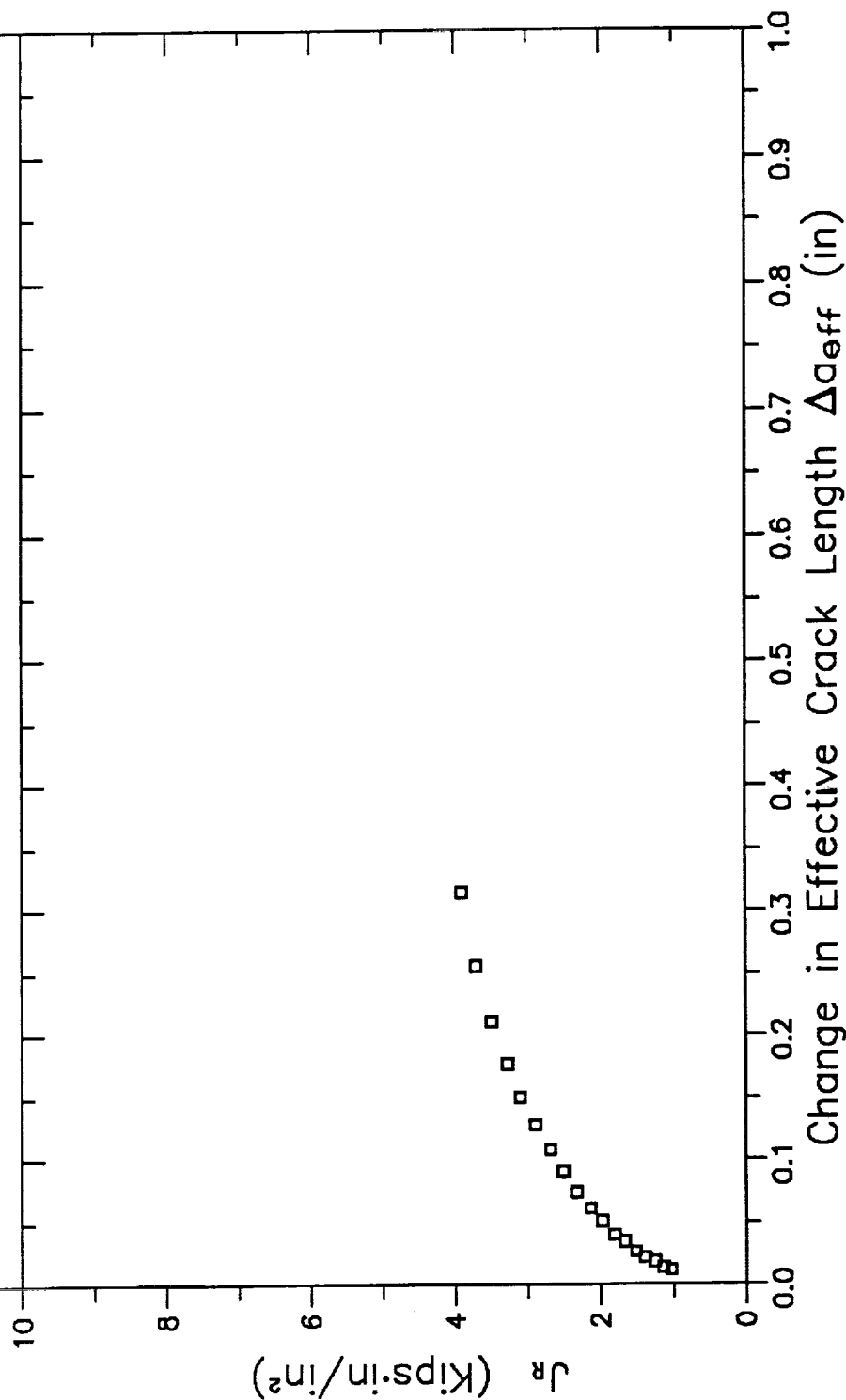


# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

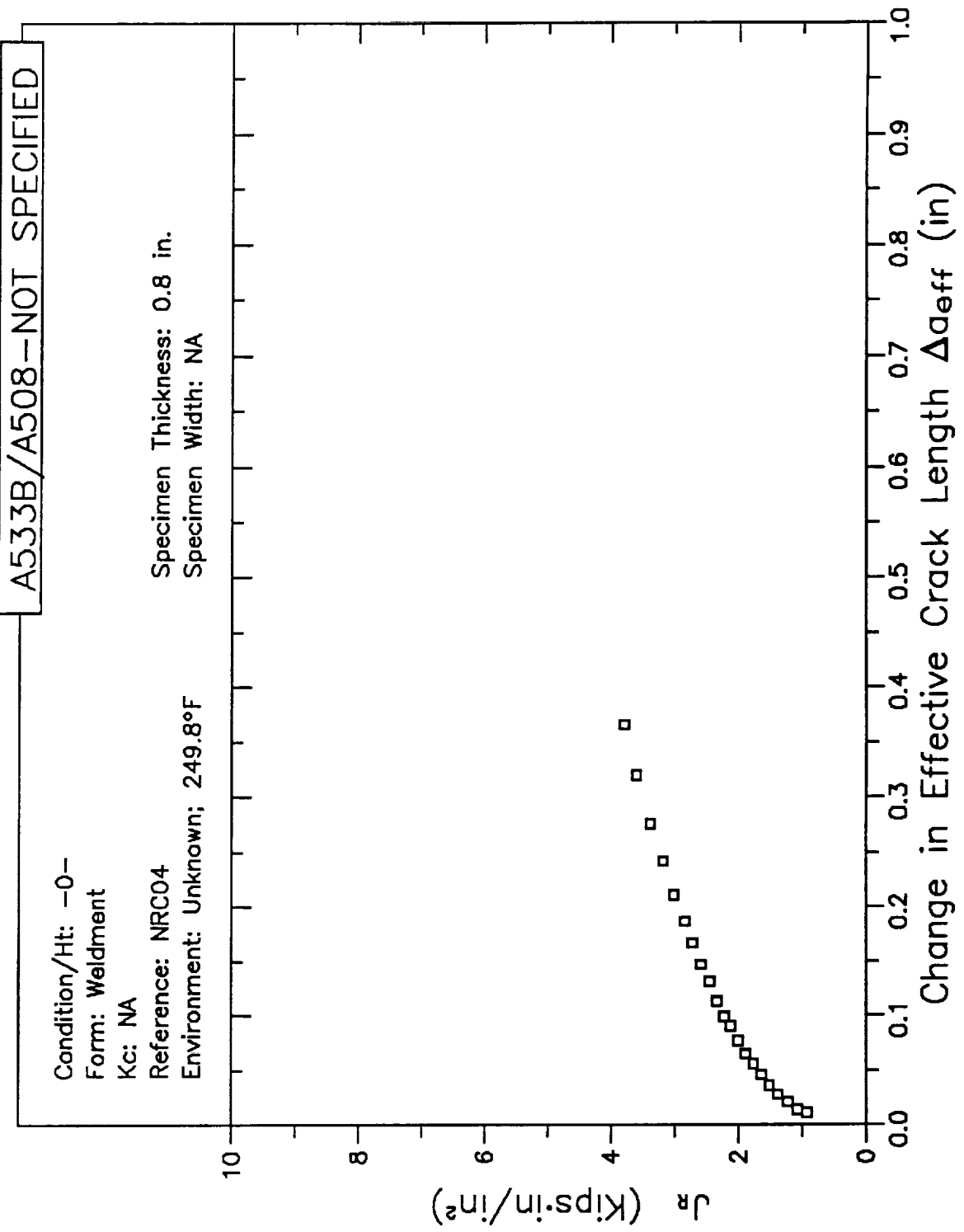
Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 249.8°F

Specimen Thickness: 0.8 in.  
Specimen Width: NA

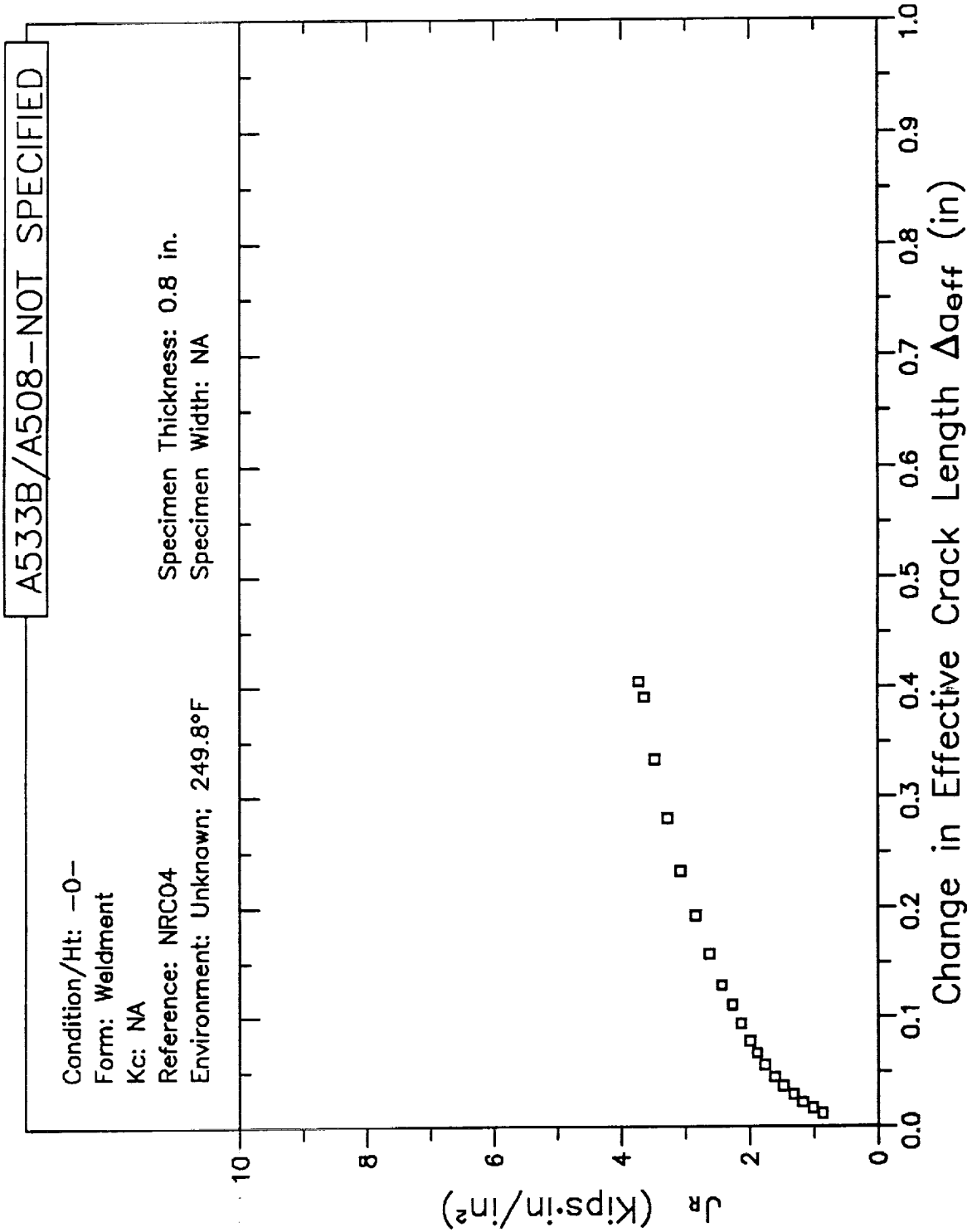




# RESISTANCE CURVE



# RESISTANCE CURVE



# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

Condition/Ht: -0-

Form: RPV Base Metal

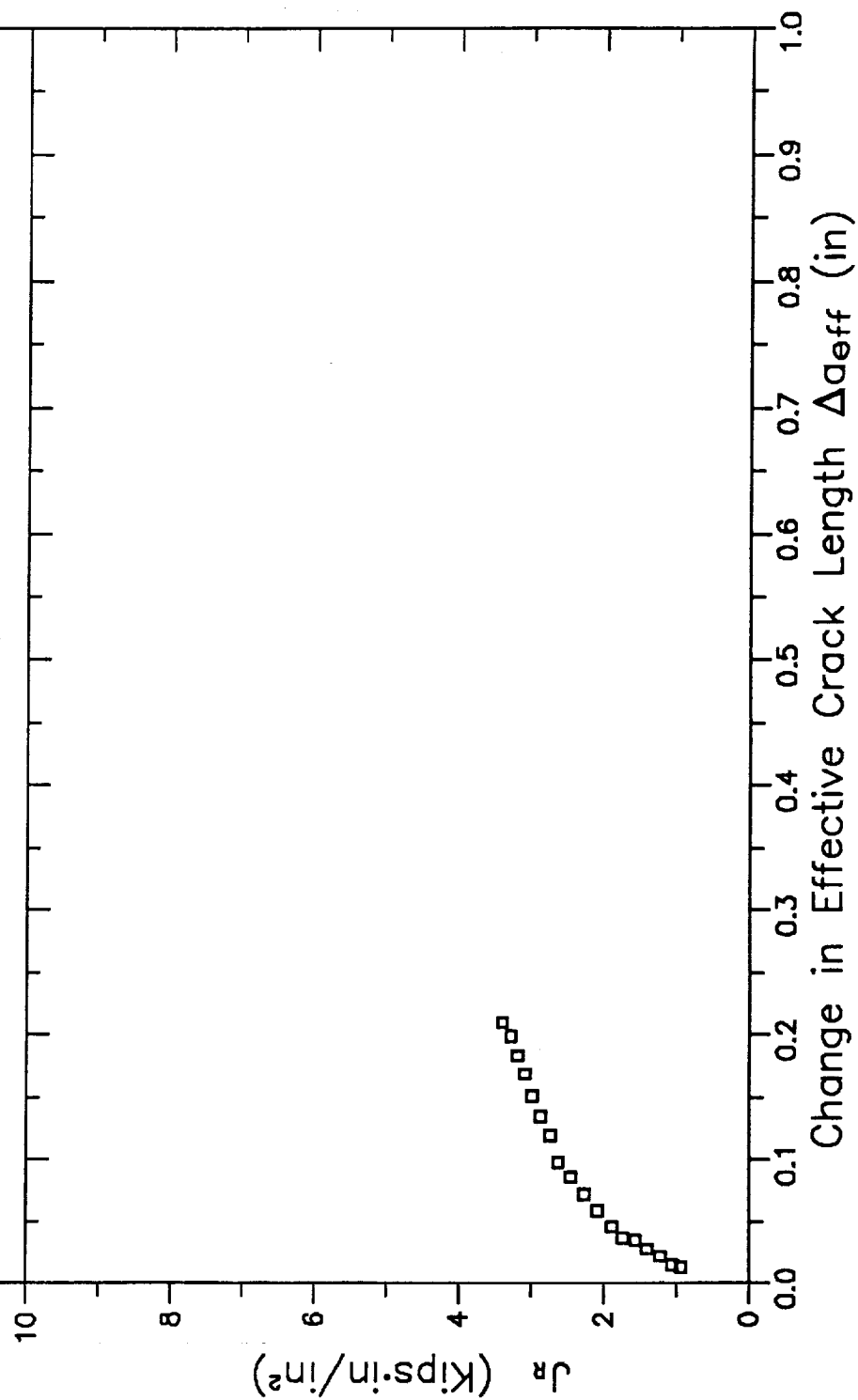
Kc: NA

Reference: NRC04

Environment: Unknown; 250°F

Specimen Thickness: 0.8 in.

Specimen Width: NA

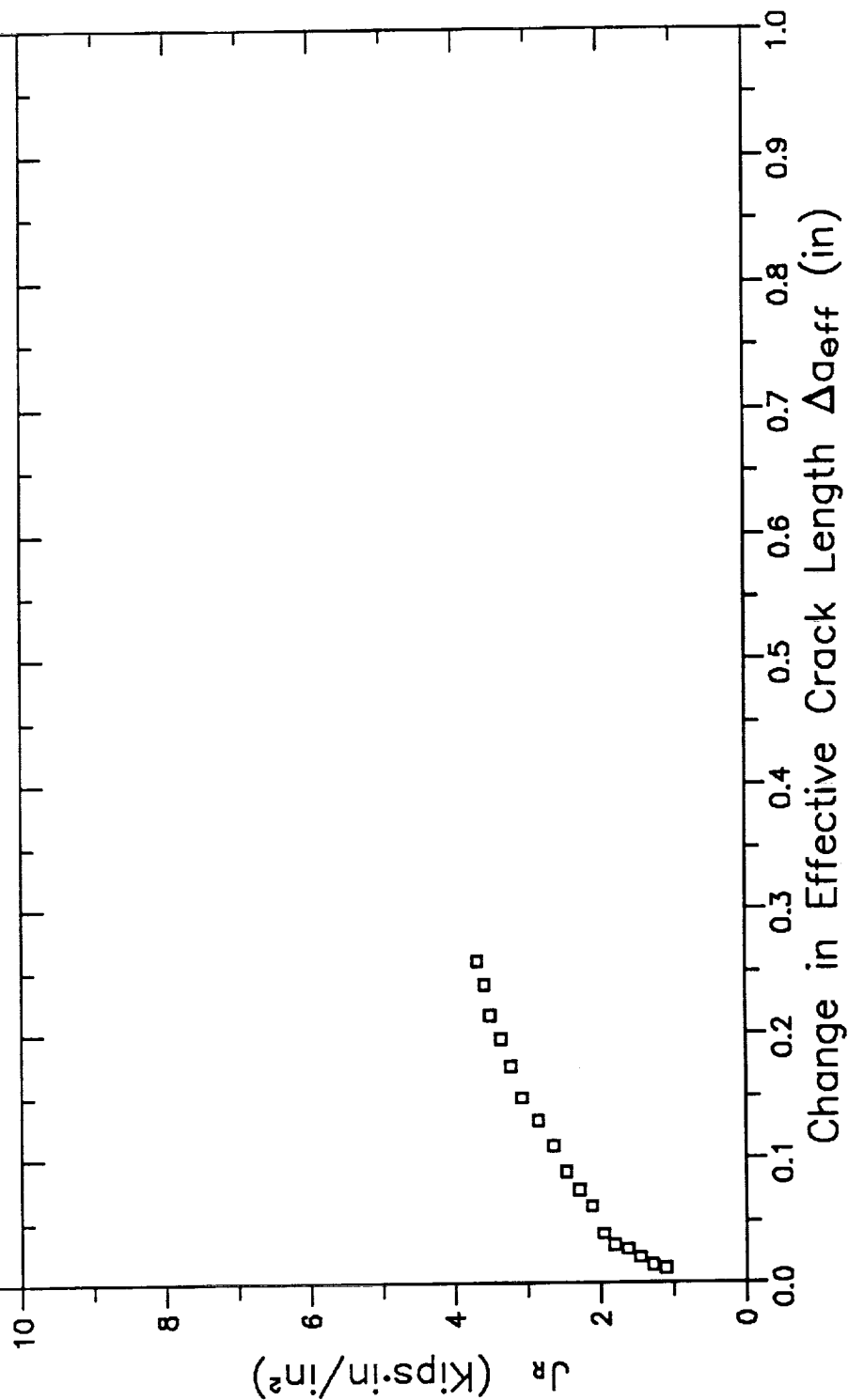


# RESISTANCE CURVE

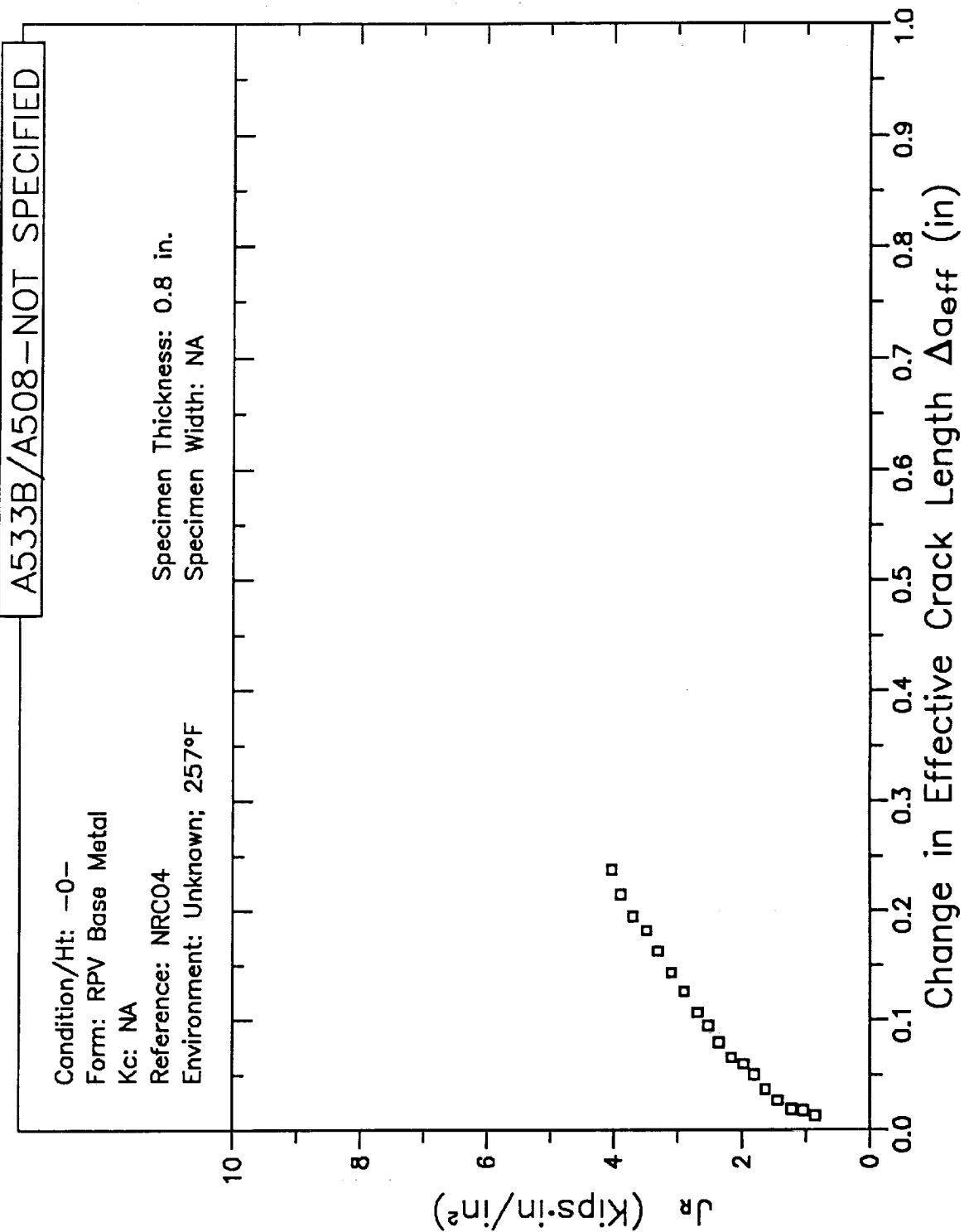
A533B/A508—NOT SPECIFIED

Condition/Ht: -0-  
 Form: RPV Base Metal  
 Kc: NA  
 Reference: NRC04  
 Environment: Unknown; 250°F

Specimen Thickness: 0.804 in.  
 Specimen Width: NA



# RESISTANCE CURVE

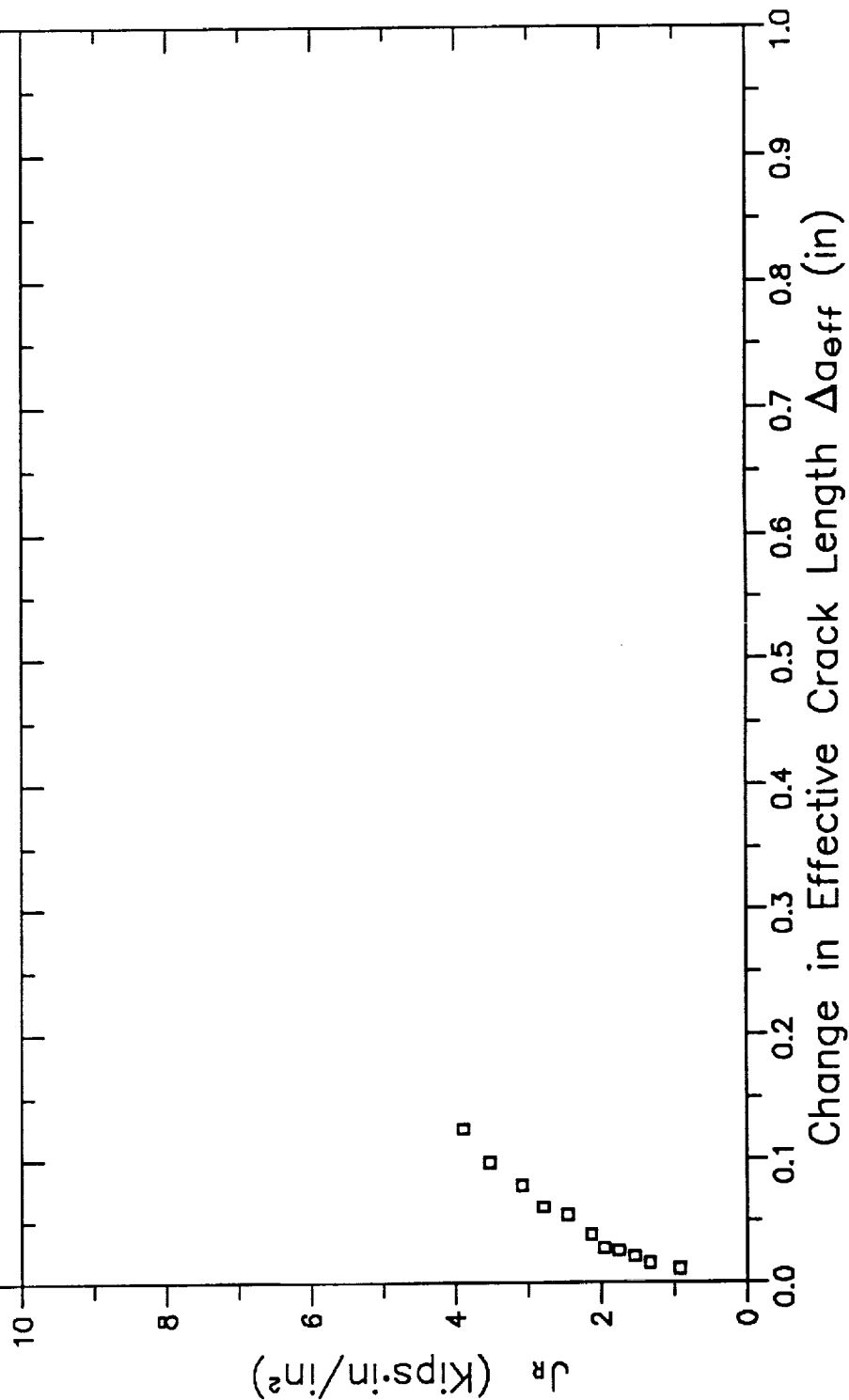


# RESISTANCE CURVE

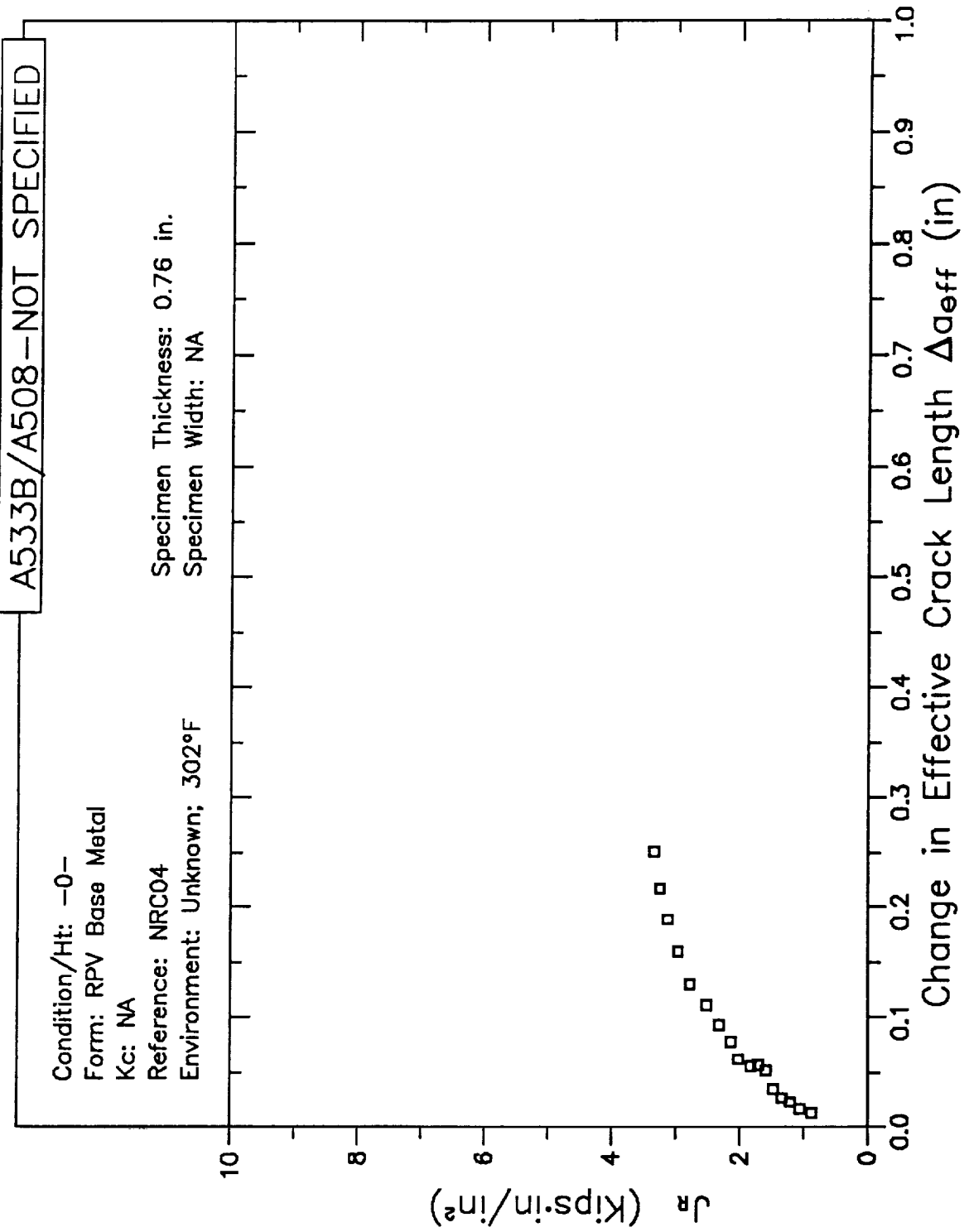
A533B/A508—NOT SPECIFIED

Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 298.4°F

Specimen Thickness: 0.8 in.  
Specimen Width: NA



# RESISTANCE CURVE

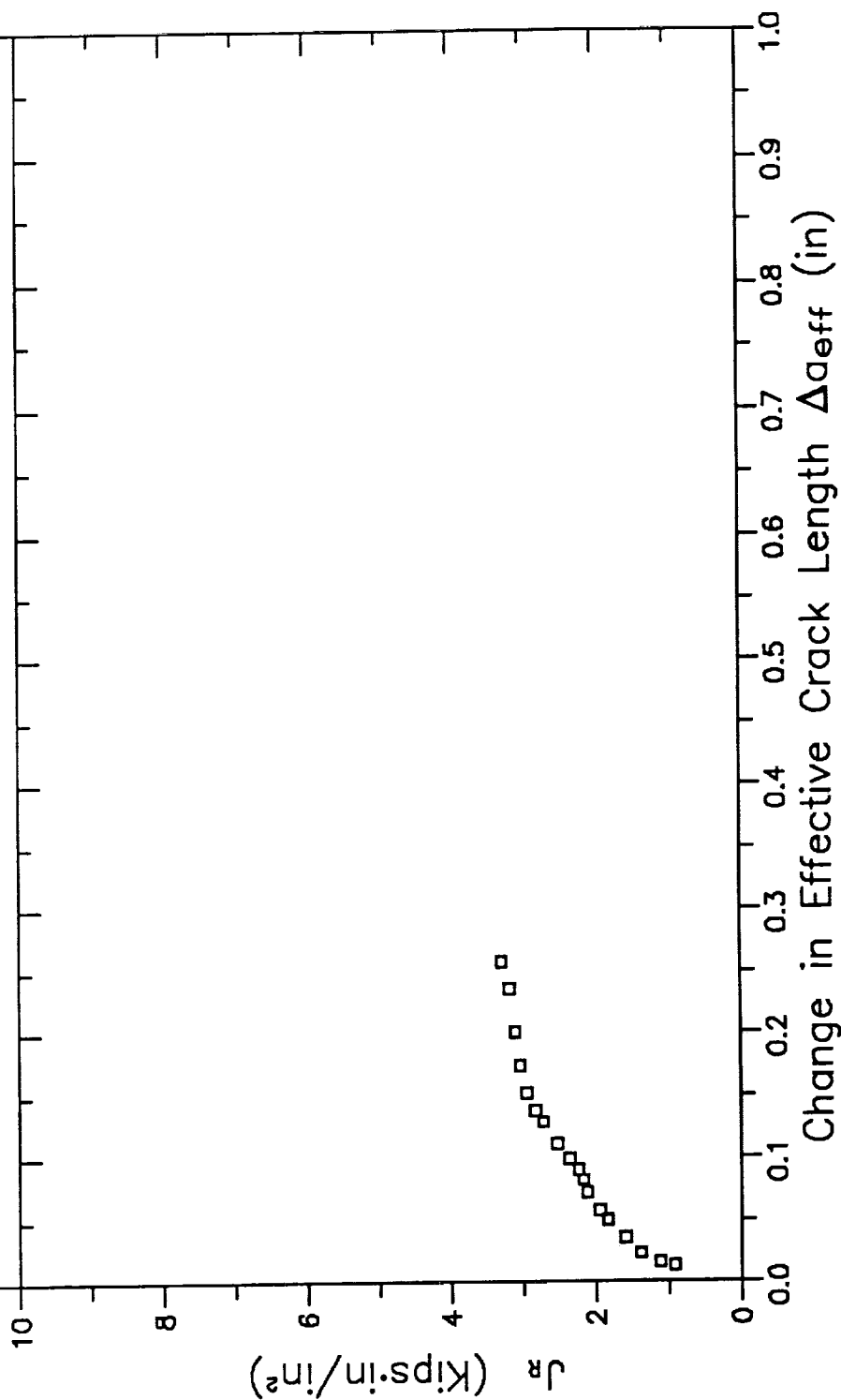


# RESISTANCE CURVE

A533B/A508 - NOT SPECIFIED

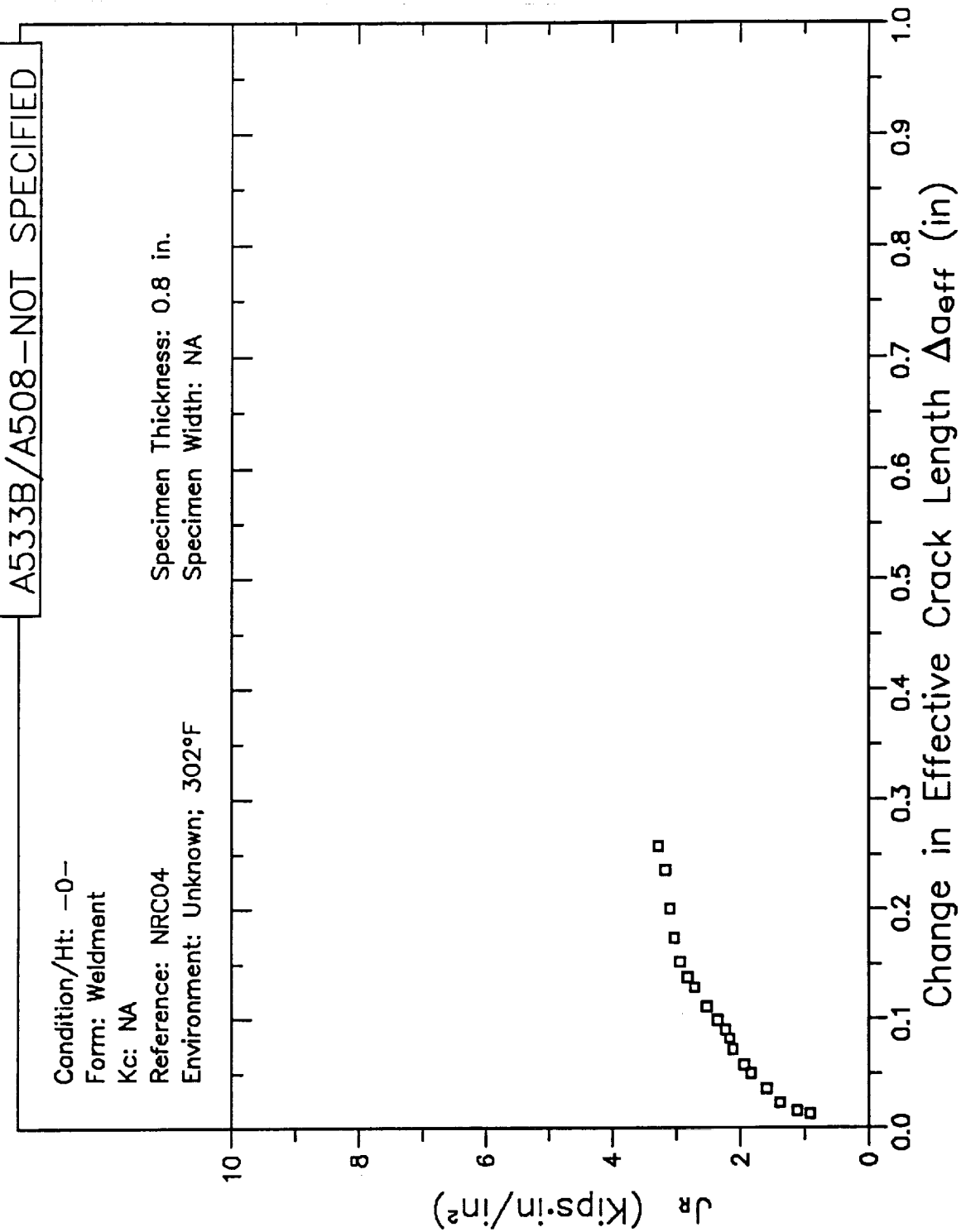
Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 302°F

Specimen Thickness: 0.8 in.  
Specimen Width: NA





# RESISTANCE CURVE

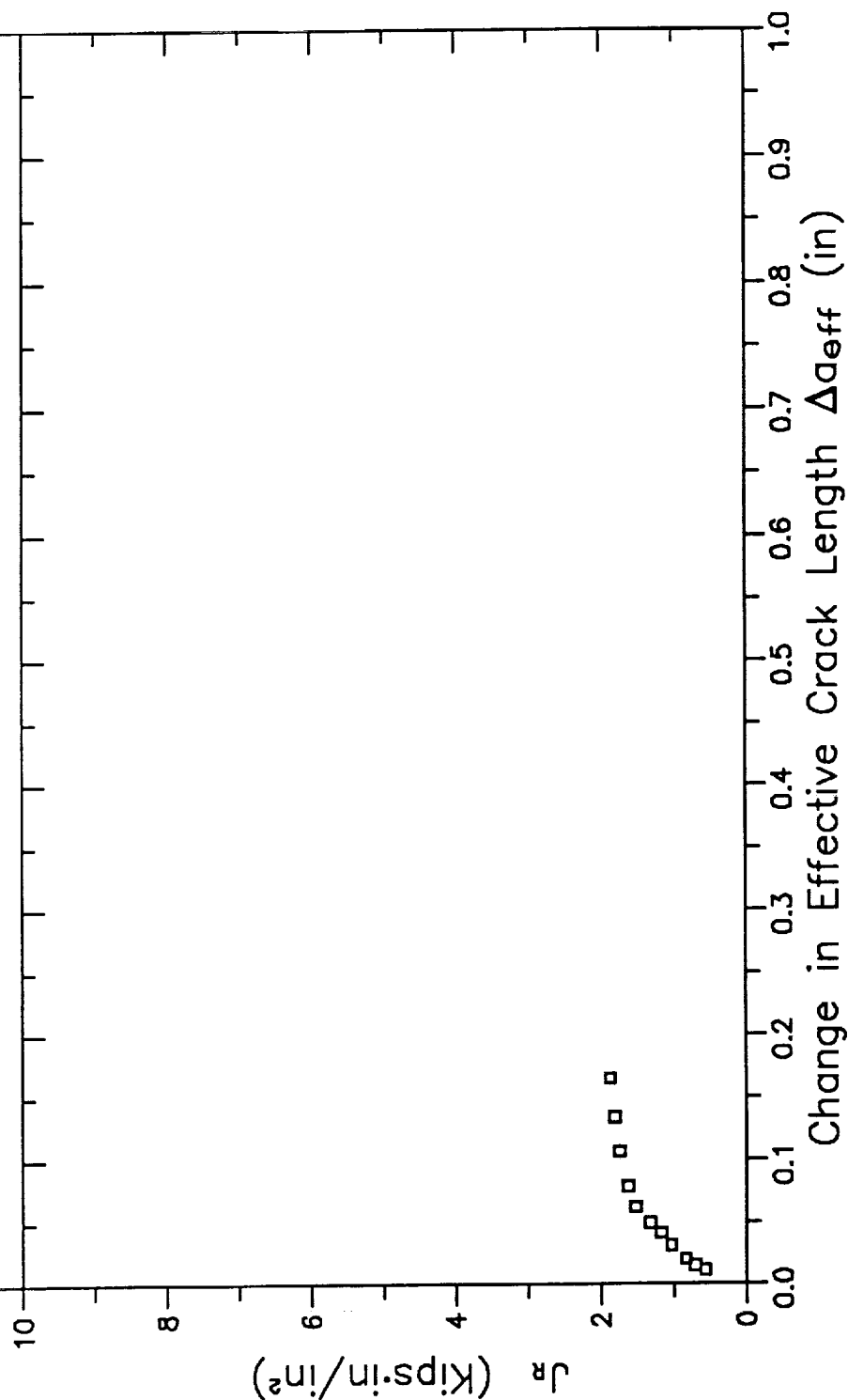


# RESISTANCE CURVE

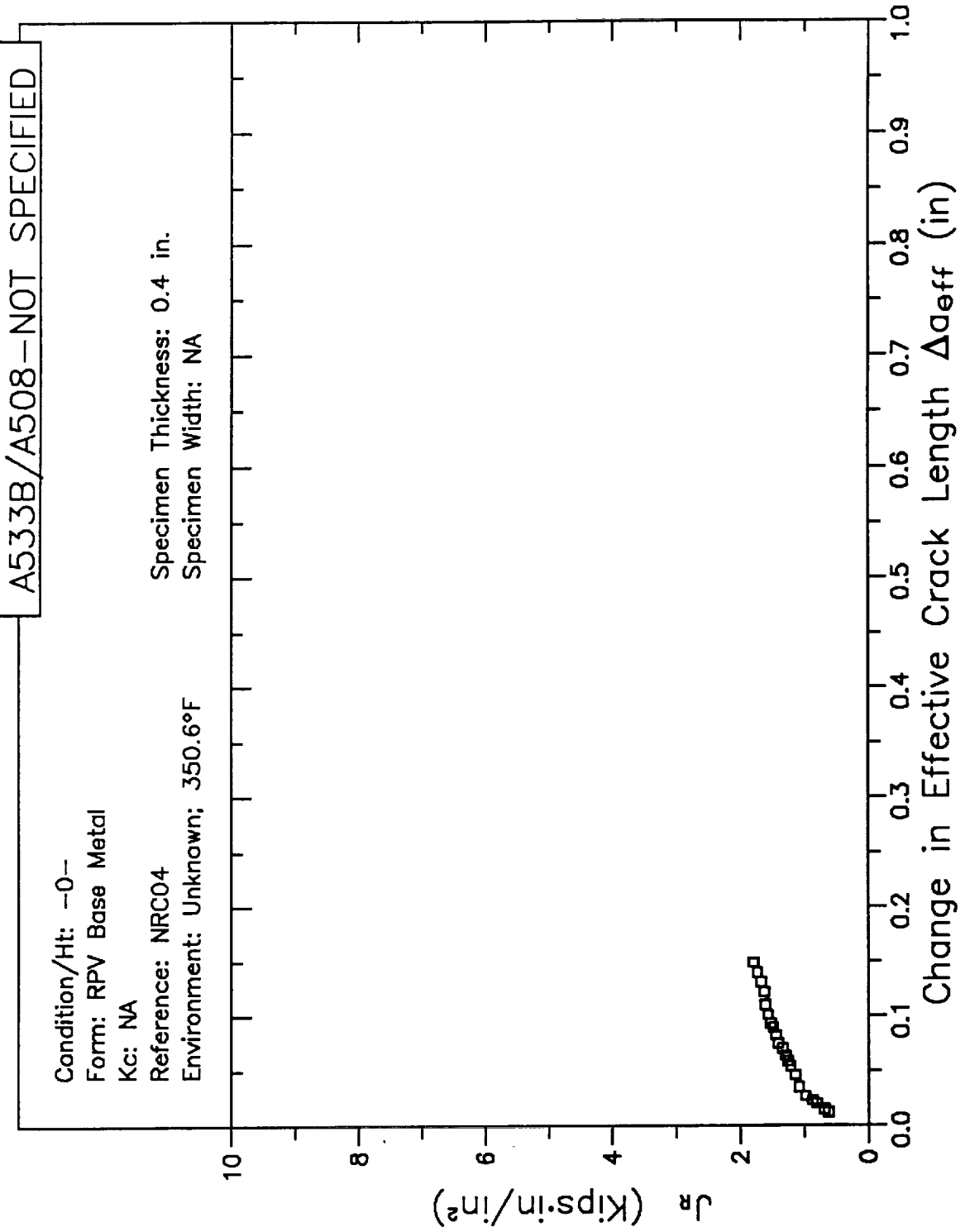
A533B/A508—NOT SPECIFIED

Condition/Ht: -0-  
 Form: RPV Base Metal  
 Kc: NA  
 Reference: NRC04  
 Environment: Unknown; 350.6°F

Specimen Thickness: 0.4 in.  
 Specimen Width: NA



# RESISTANCE CURVE



# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

Condition/Ht: -0-

Form: RPV Base Metal

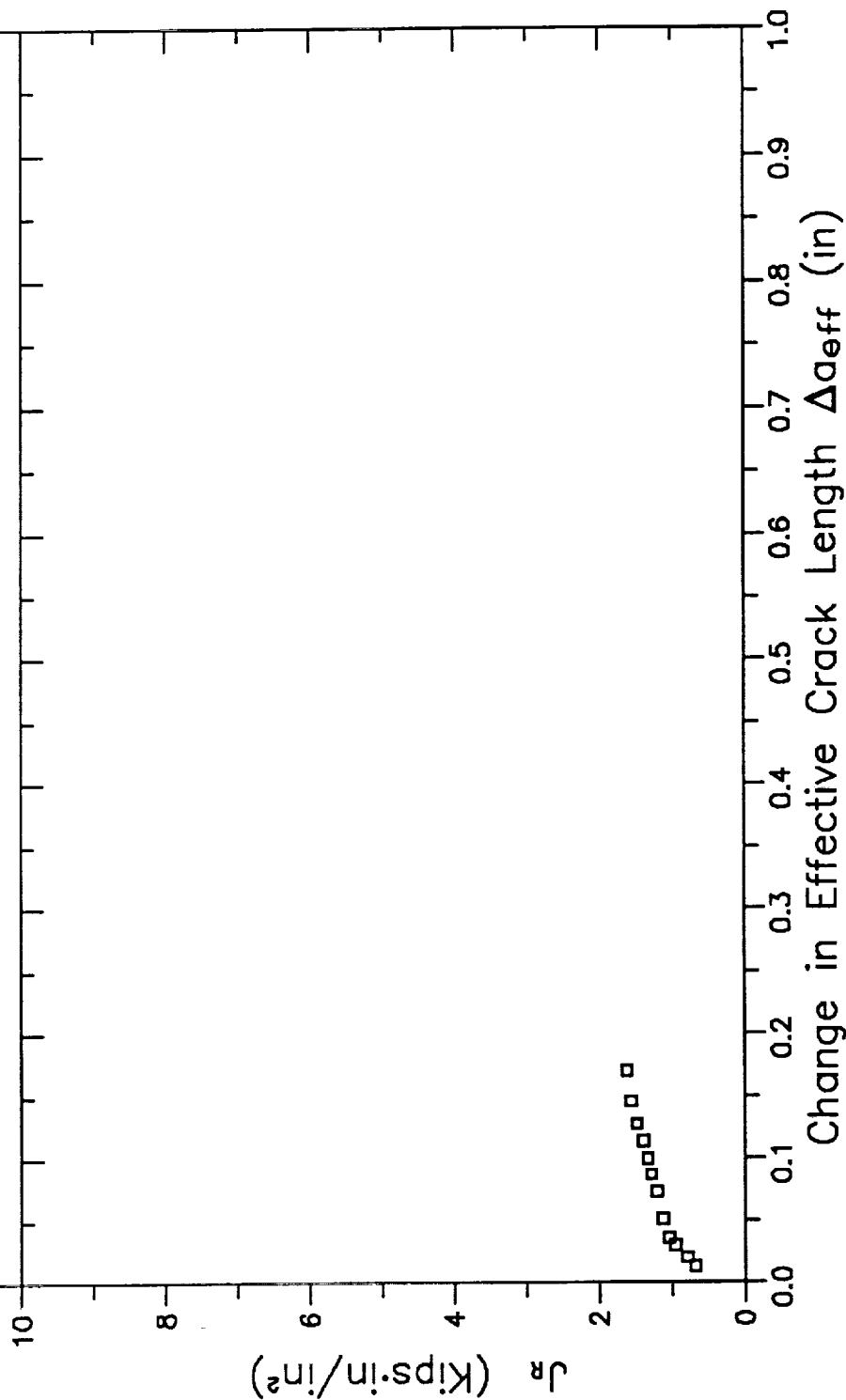
Kc: NA

Reference: NRC04

Environment: Unknown; 350.6°F

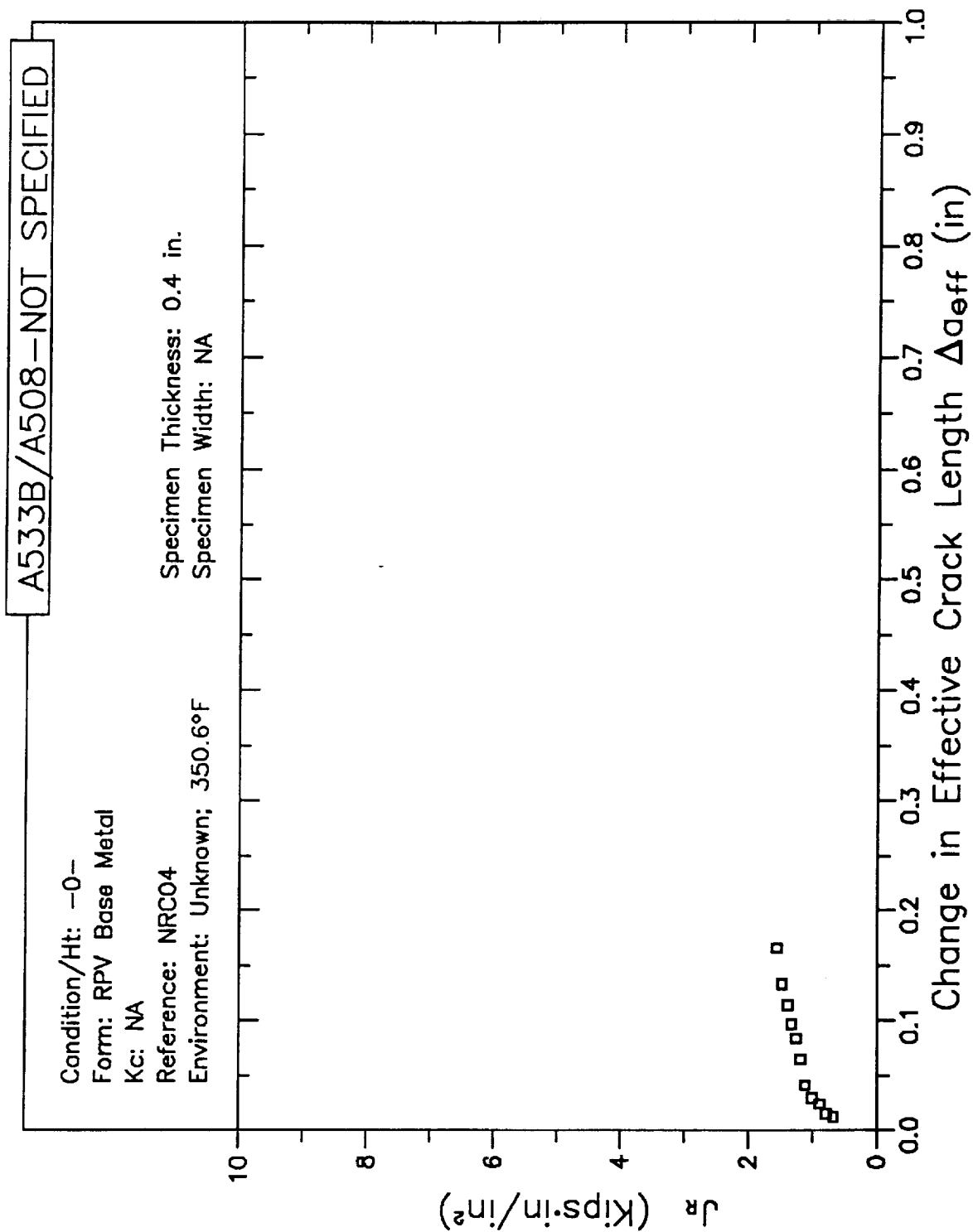
Specimen Thickness: 0.4 in.

Specimen Width: NA



B3-140

# RESISTANCE CURVE



# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

Condition/Ht: -0-

Form: RPV Base Metal

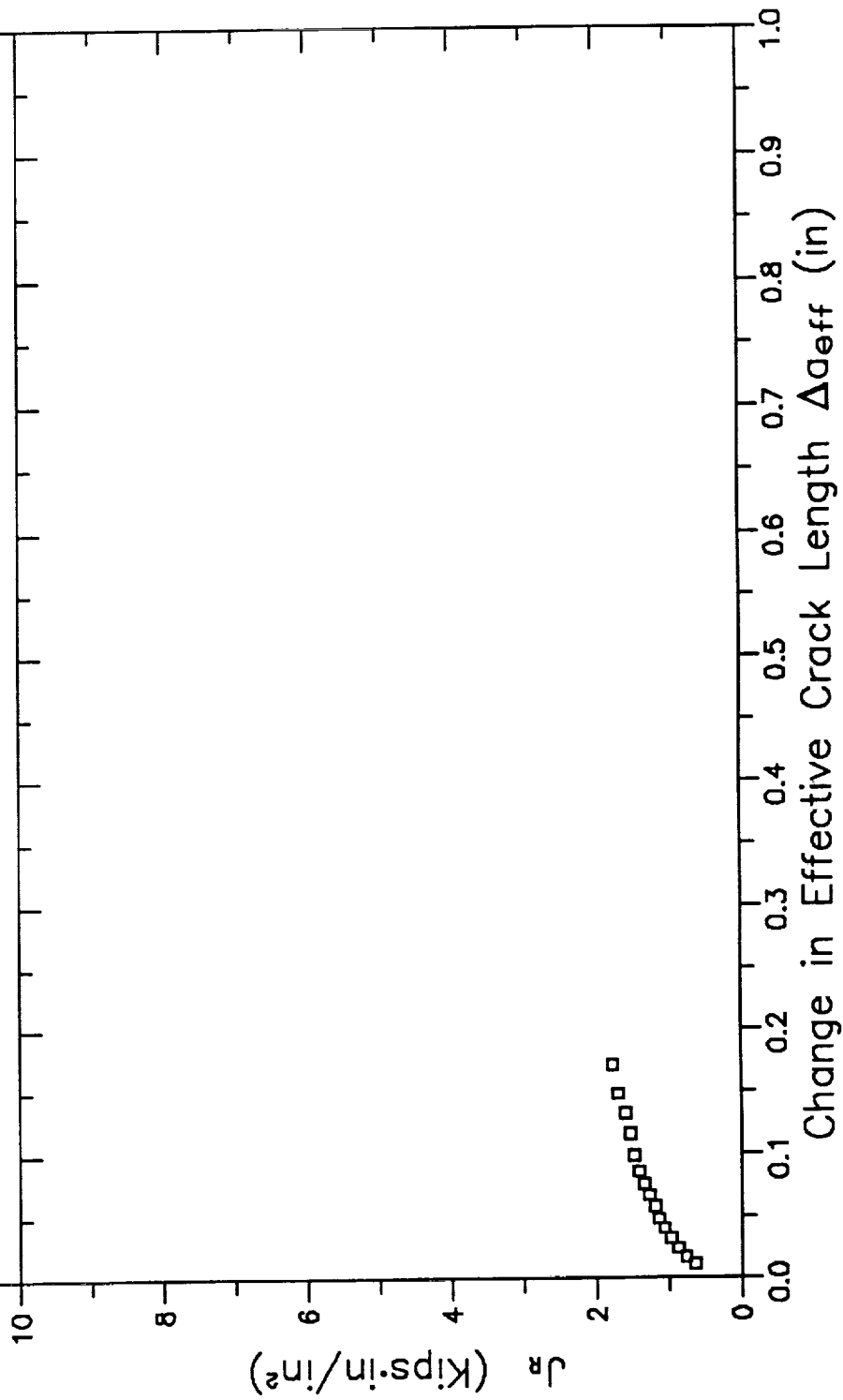
Kc: NA

Reference: NRC04

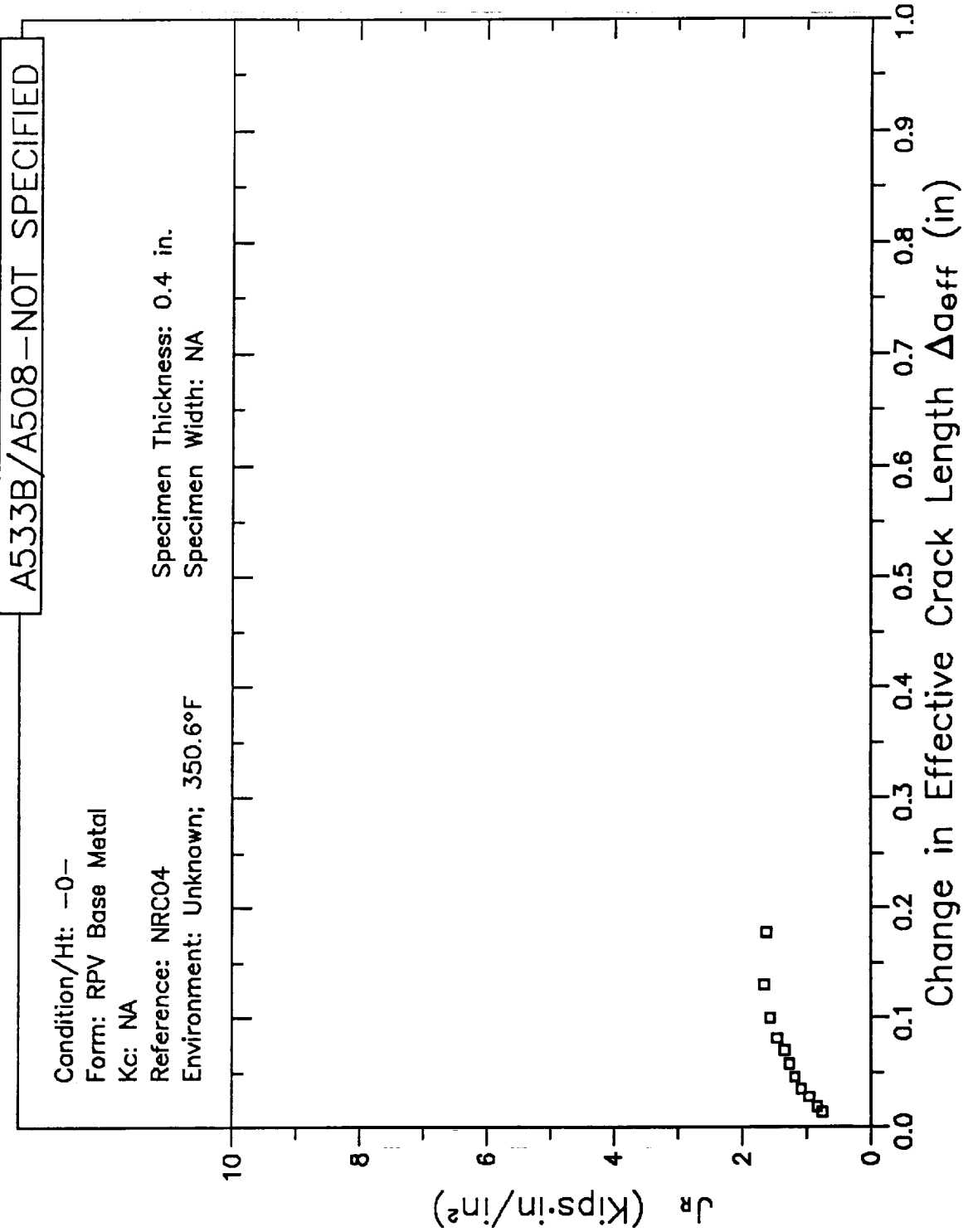
Environment: Unknown; 350.6°F

Specimen Thickness: 0.4 in.

Specimen Width: NA



# RESISTANCE CURVE

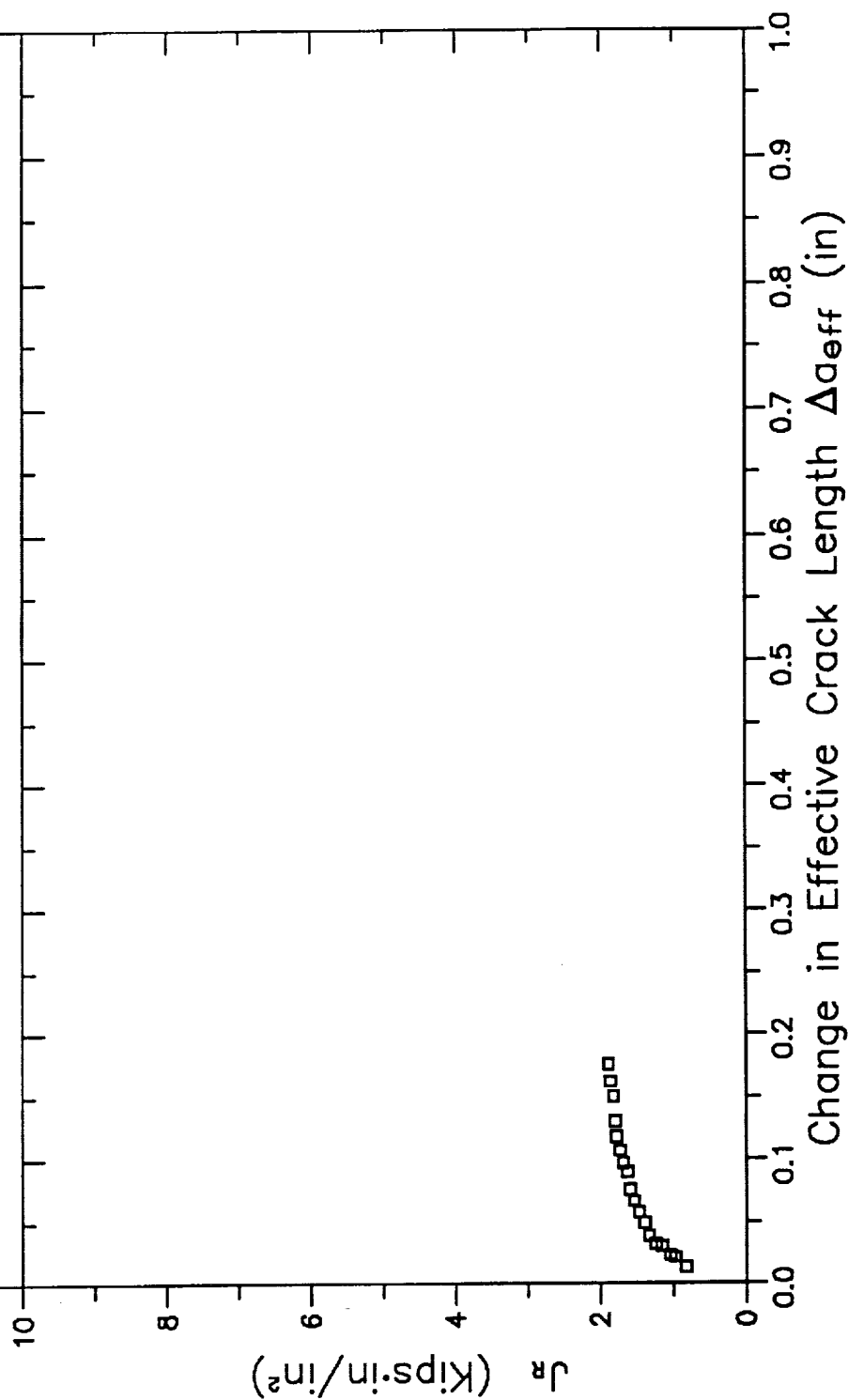


# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA

Reference: NRC04  
Environment: Unknown; 350.6°F  
Specimen Thickness: 0.4 in.  
Specimen Width: NA





# RESISTANCE CURVE

A533B/A508 - NOT SPECIFIED

Condition/Ht: -0-

Form: RPV Base Metal

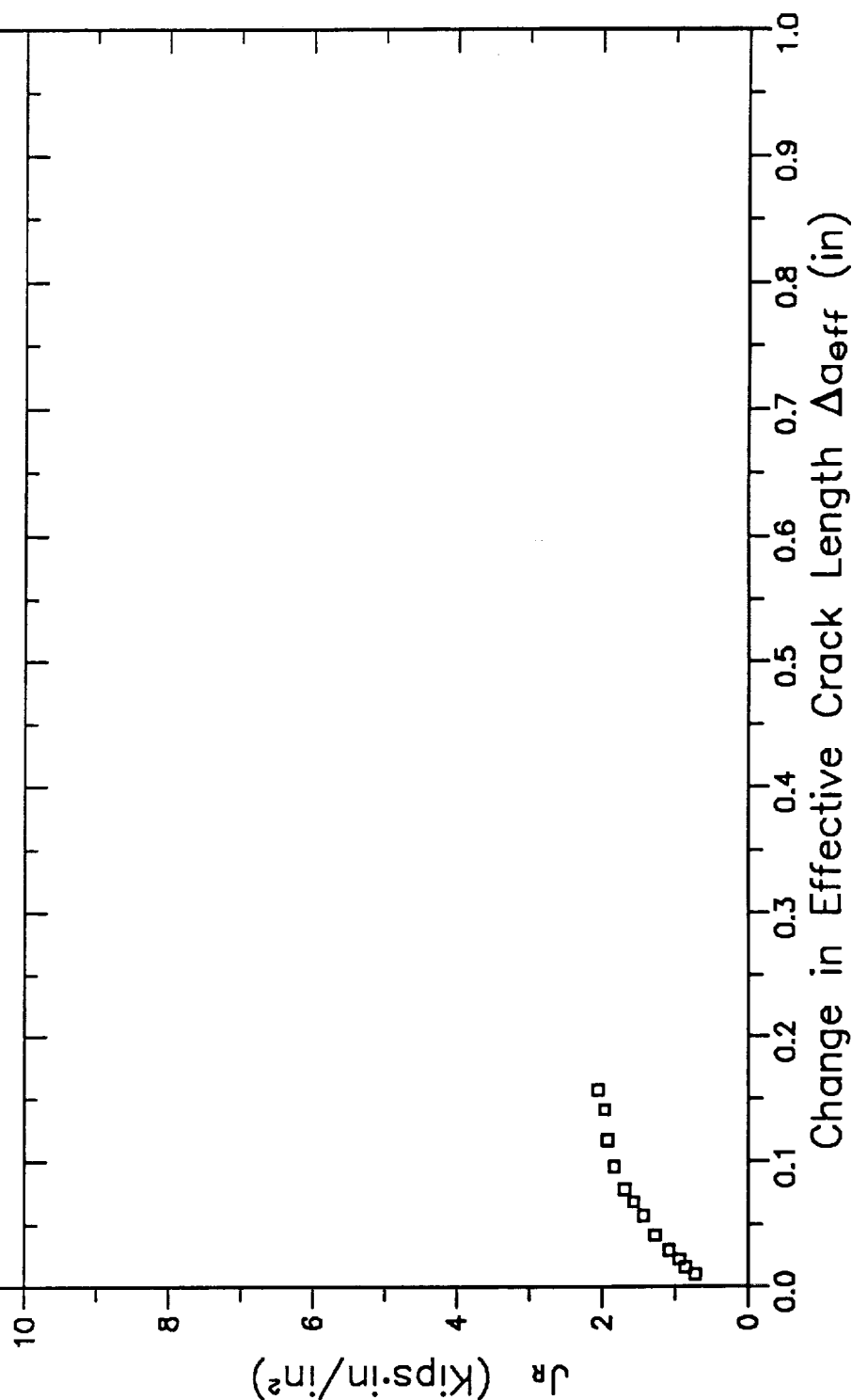
Kc: NA

Reference: NRC04

Environment: Unknown; 350.6°F

Specimen Thickness: 0.4 in.

Specimen Width: NA

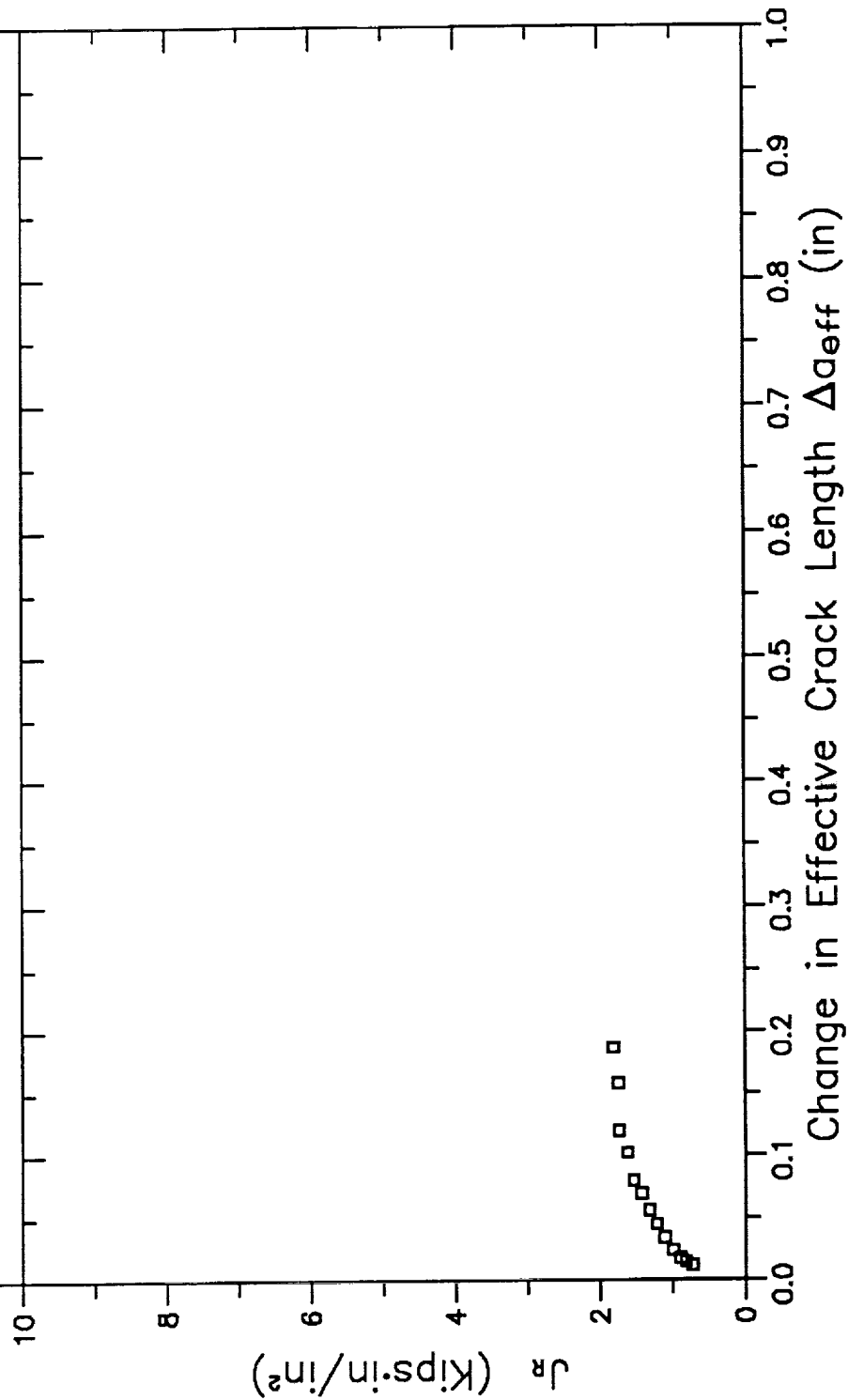


# RESISTANCE CURVE

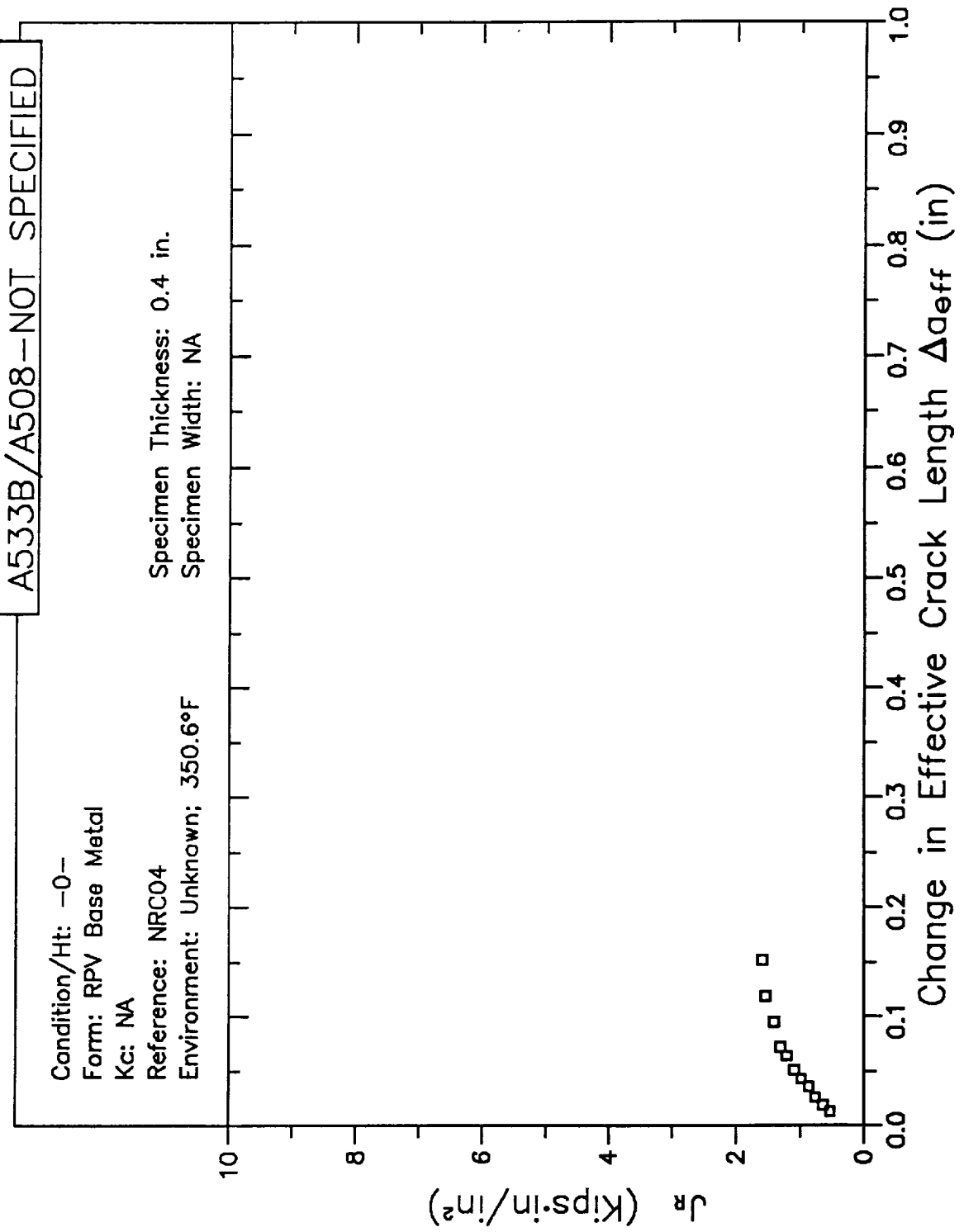
A533B/A508—NOT SPECIFIED

Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 350.6°F

Specimen Thickness: 0.4 in.  
Specimen Width: NA



# RESISTANCE CURVE

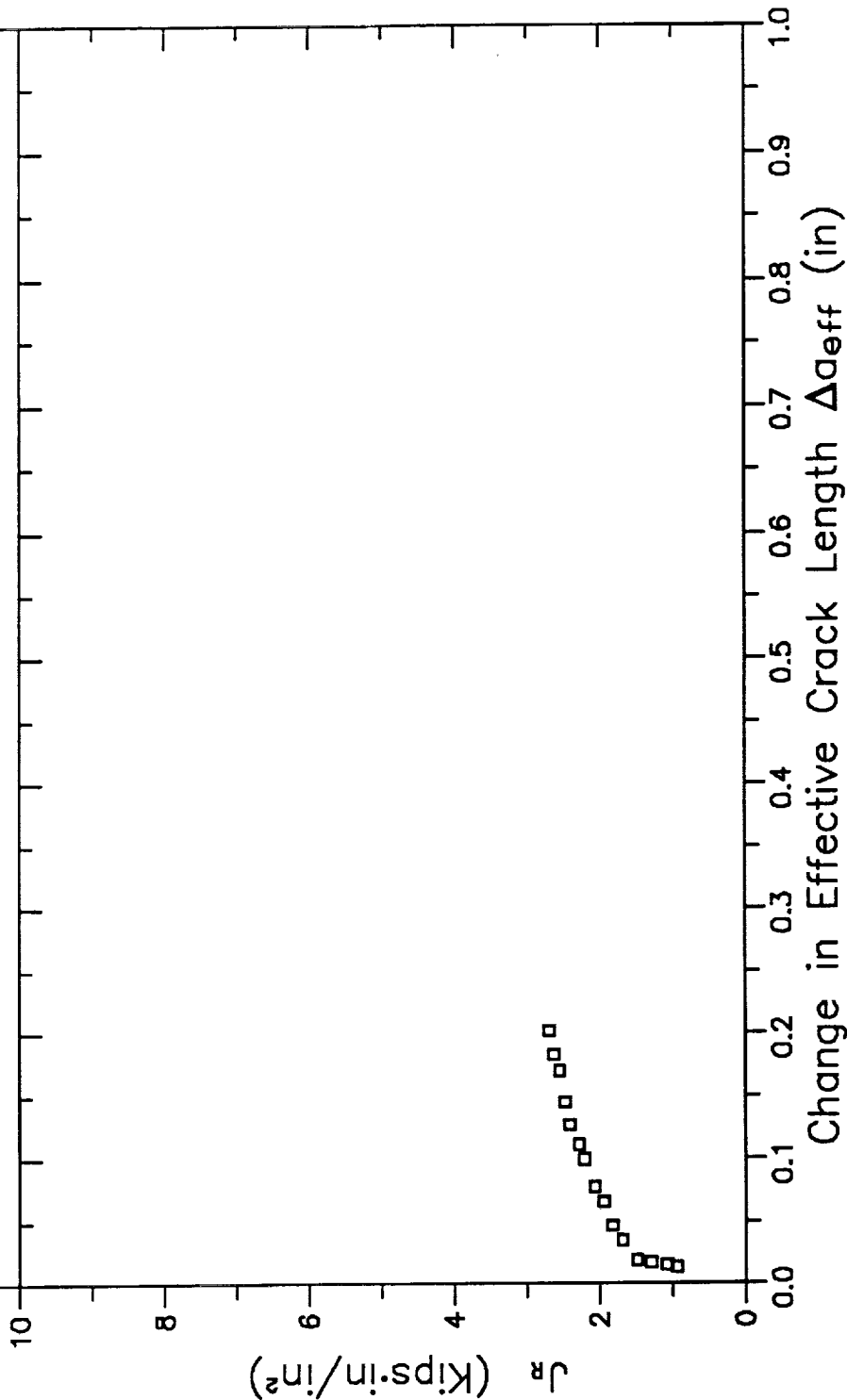


# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

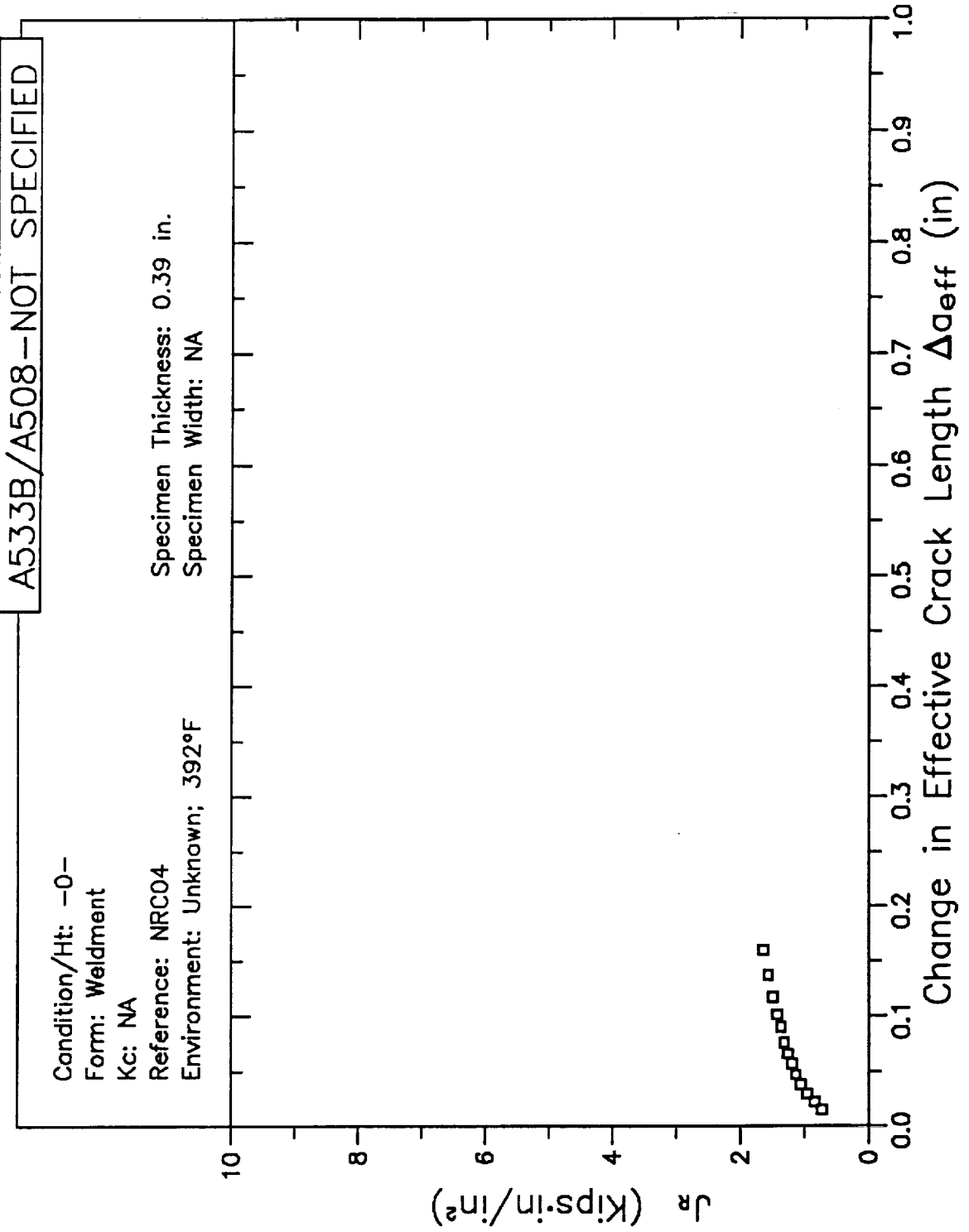
Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 356°F

Specimen Thickness: 0.8 in.  
Specimen Width: NA



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# RESISTANCE CURVE

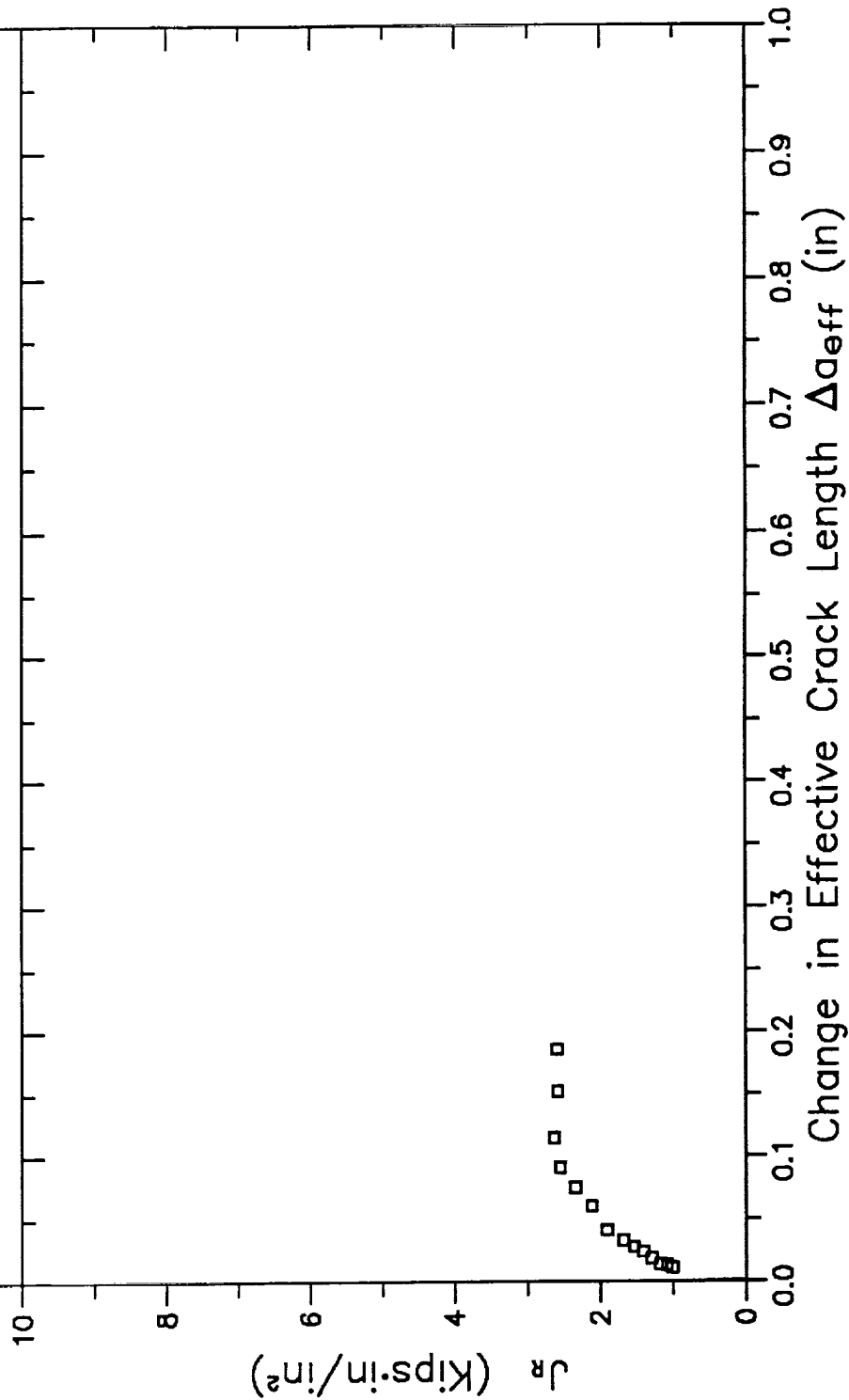


# RESISTANCE CURVE

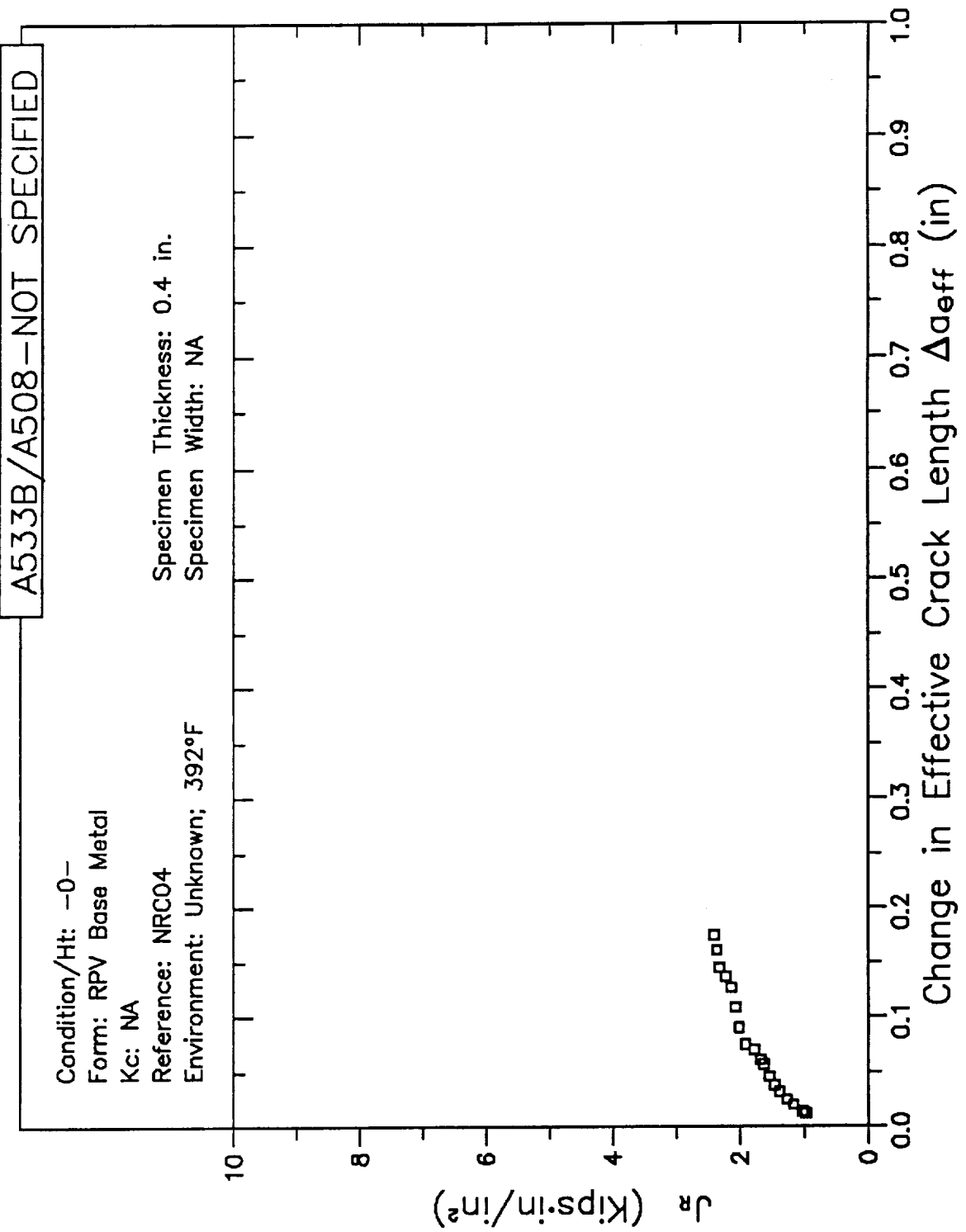
A533B/A508—NOT SPECIFIED

Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 392°F

Specimen Thickness: 0.4 in.  
Specimen Width: NA



# RESISTANCE CURVE



# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

Condition/Ht: -0-

Form: RPV Base Metal

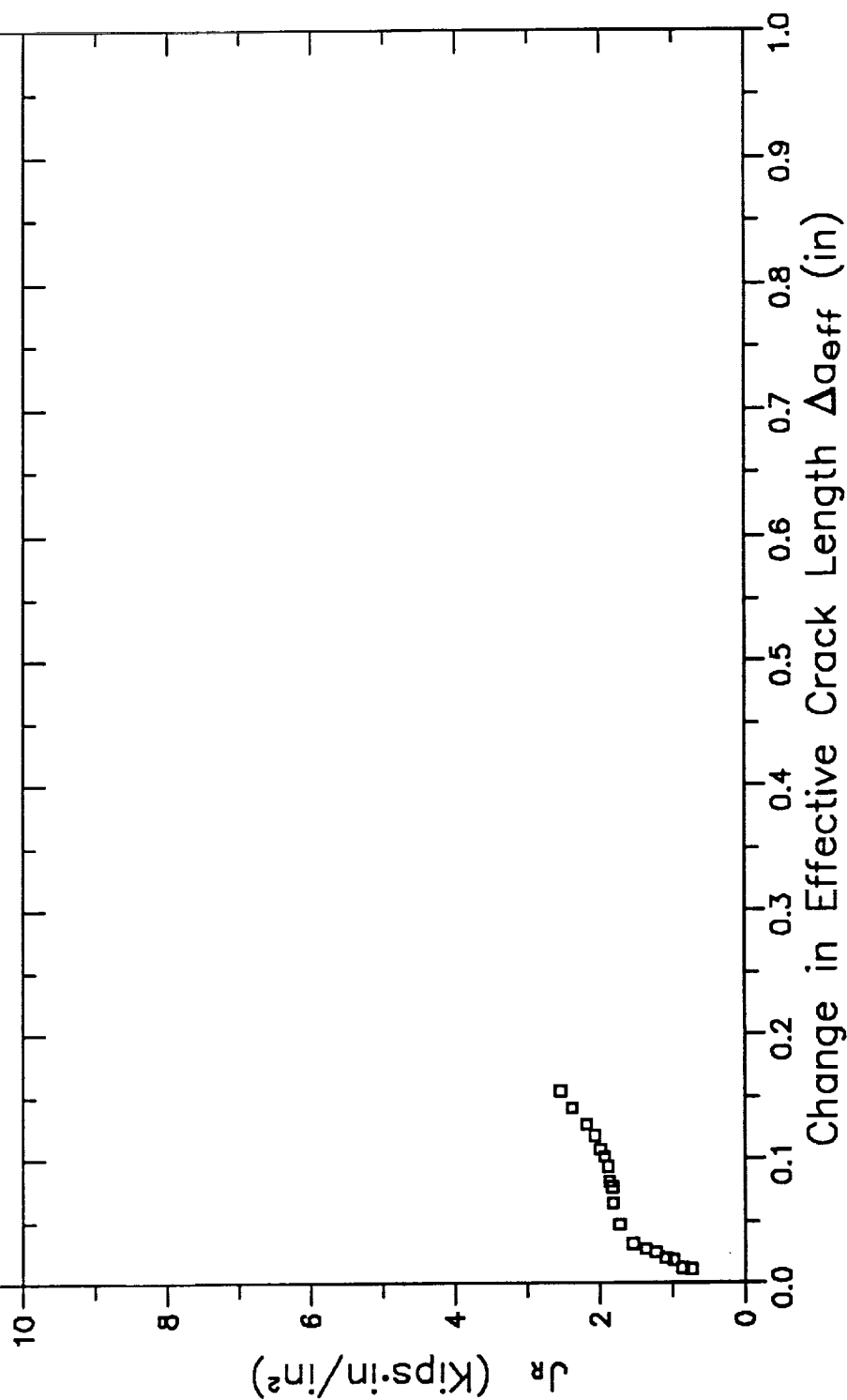
Kc: NA

Reference: NRC04

Environment: Unknown; 392°F

Specimen Thickness: 0.4 in.

Specimen Width: NA





# RESISTANCE CURVE

A533B/A508 - NOT SPECIFIED

Condition/Ht: -0-

Form: Weldment

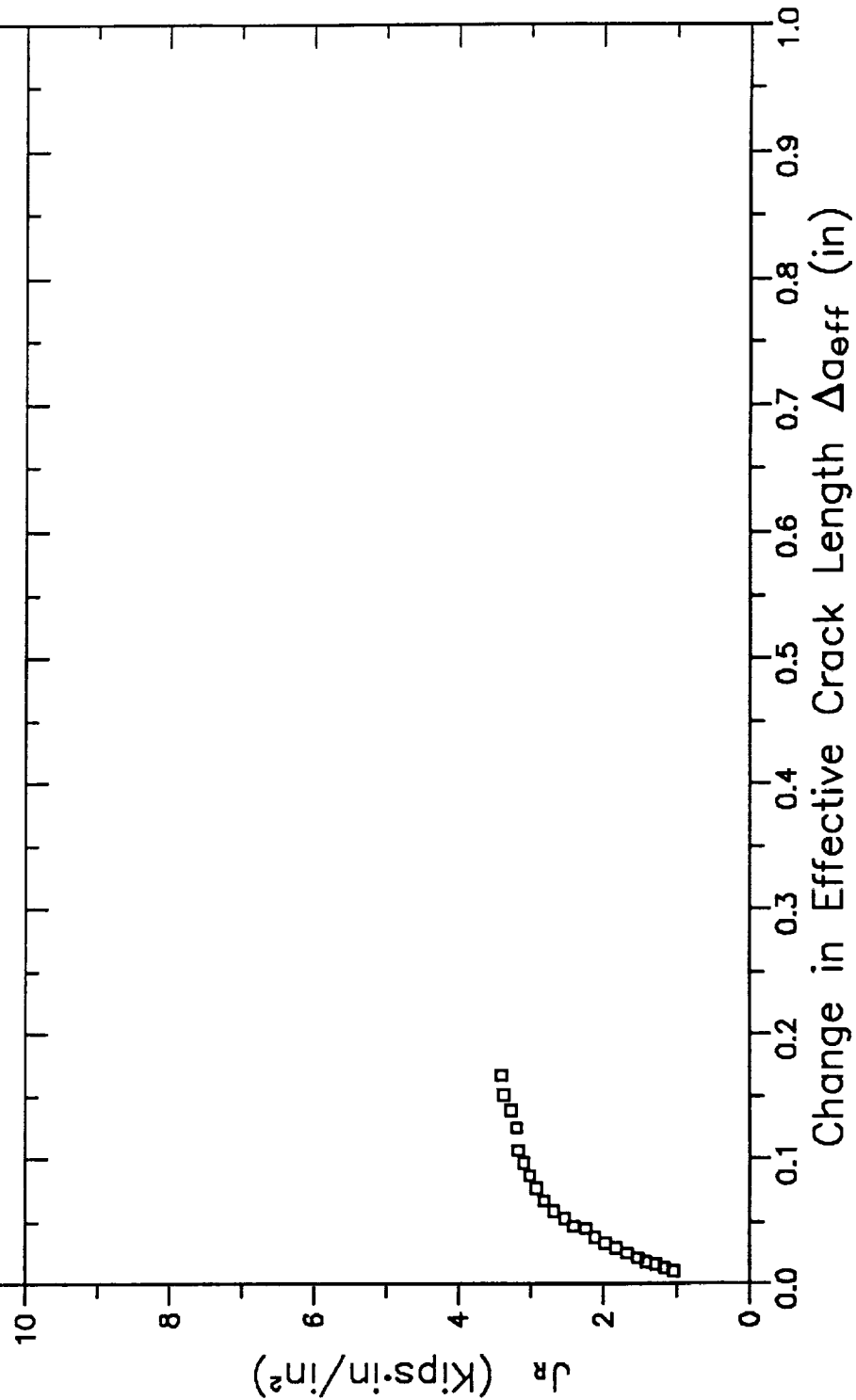
Kc: NA

Reference: NRC04

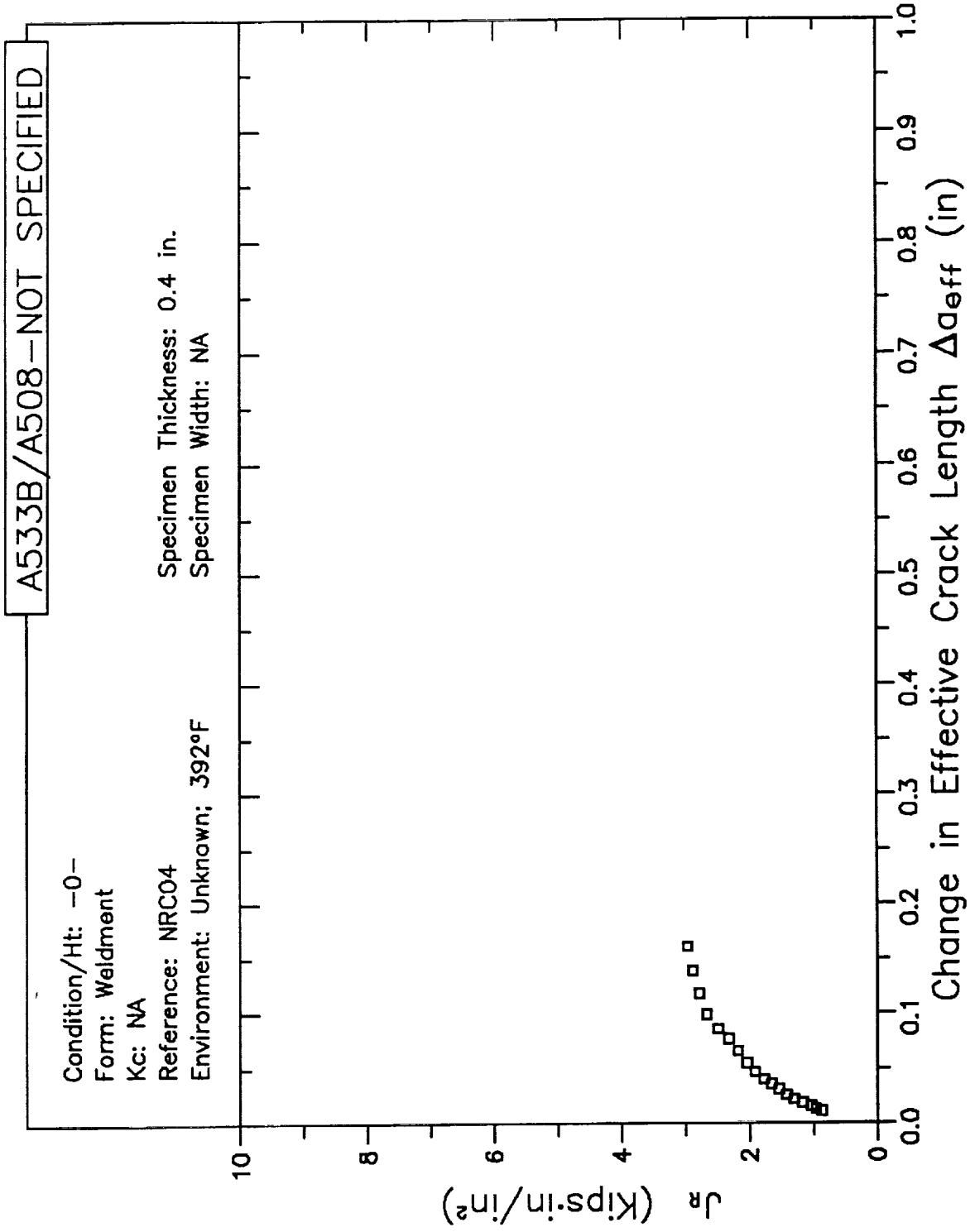
Environment: Unknown; 392°F

Specimen Thickness: 0.4 in.

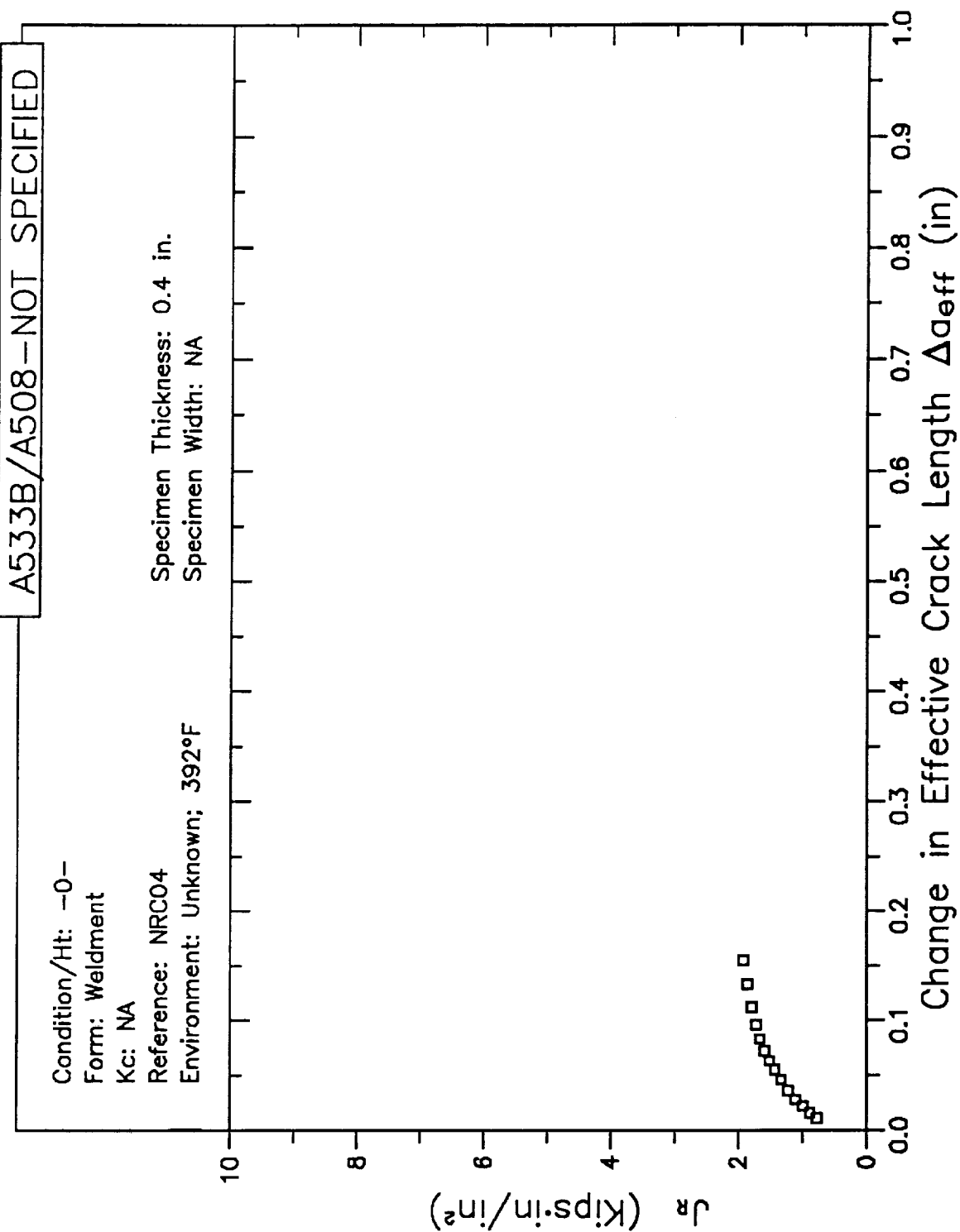
Specimen Width: NA



# RESISTANCE CURVE



# RESISTANCE CURVE

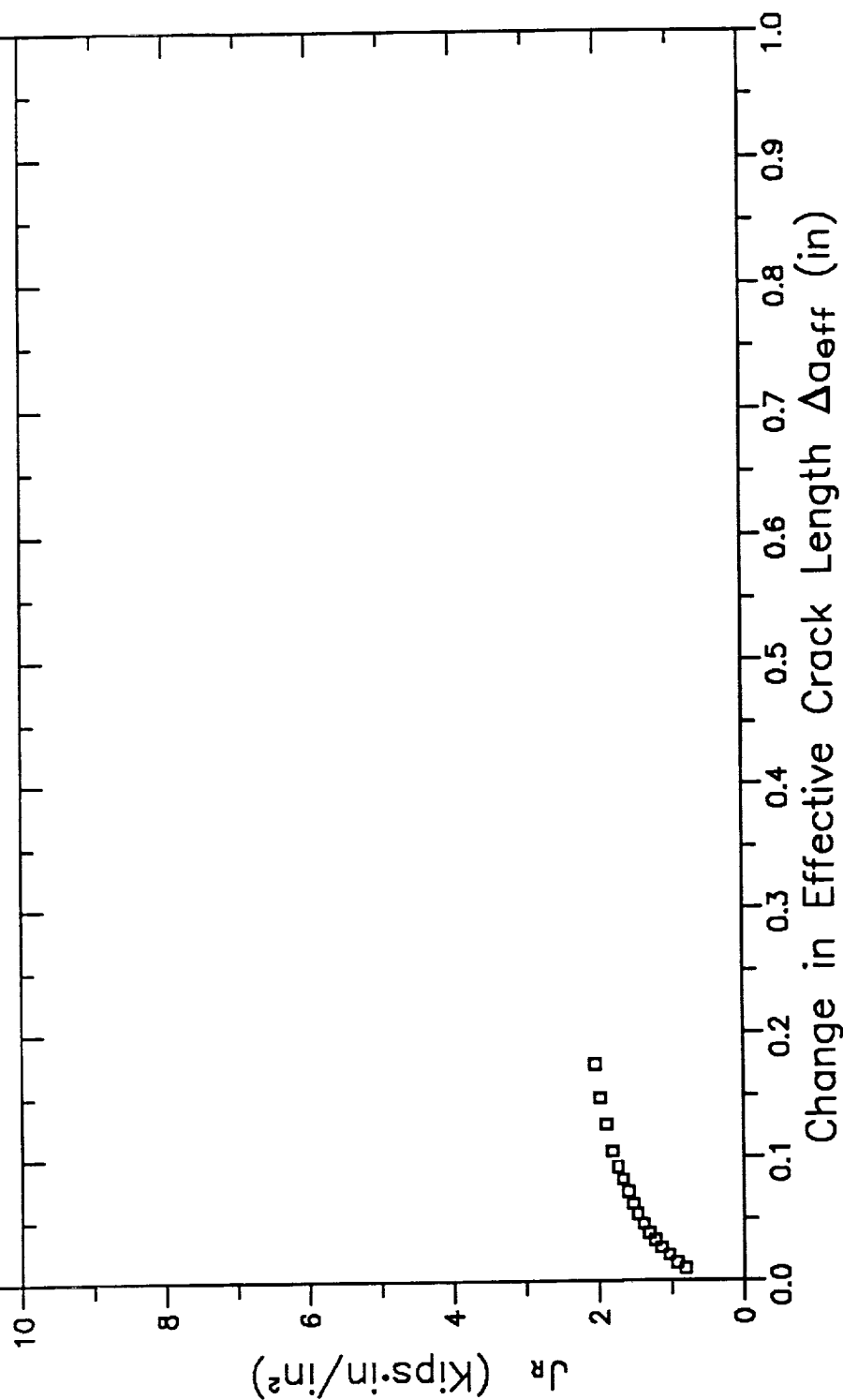


# RESISTANCE CURVE

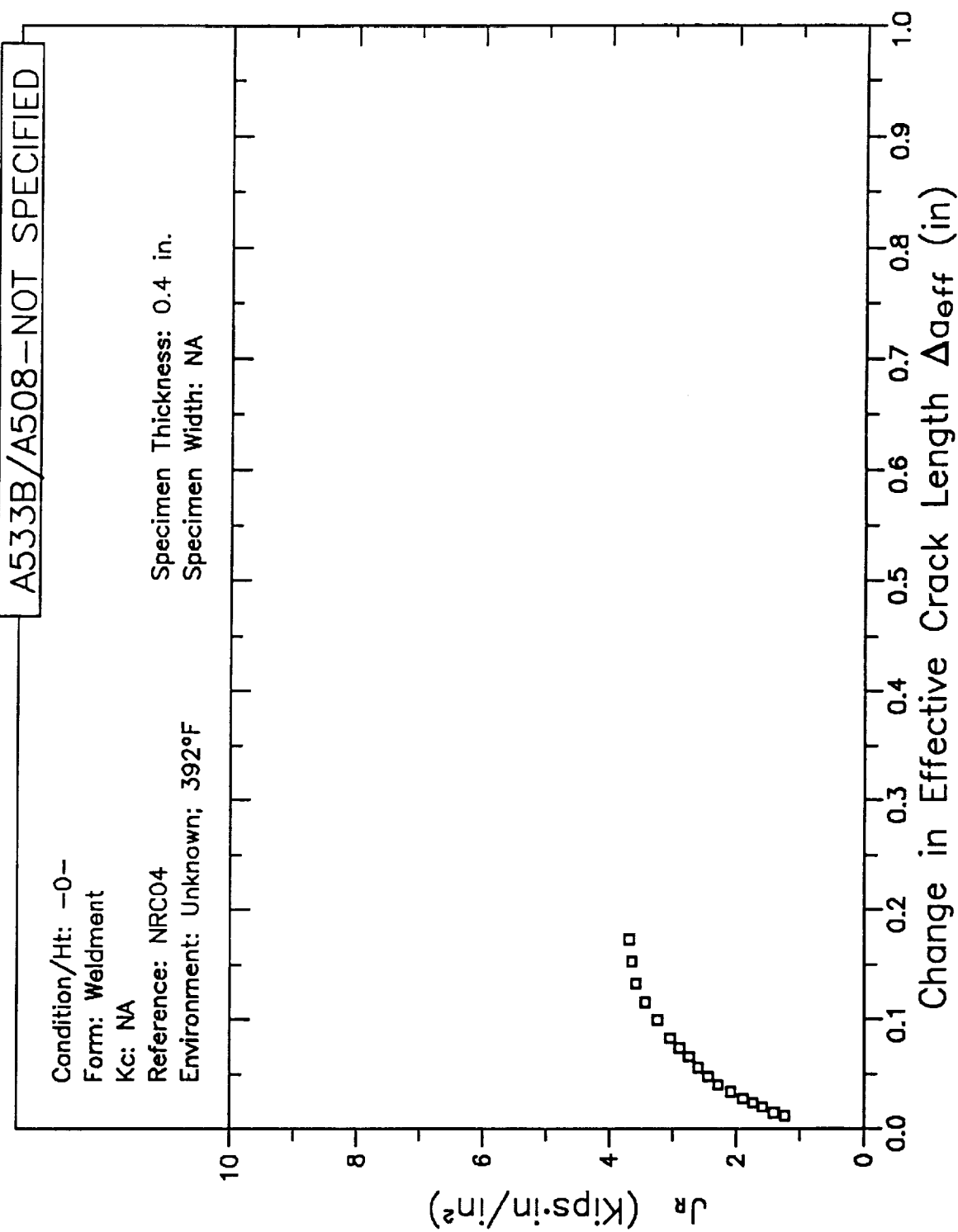
A533B/A508—NOT SPECIFIED

Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 392°F

Specimen Thickness: 0.4 in.  
Specimen Width: NA



# RESISTANCE CURVE

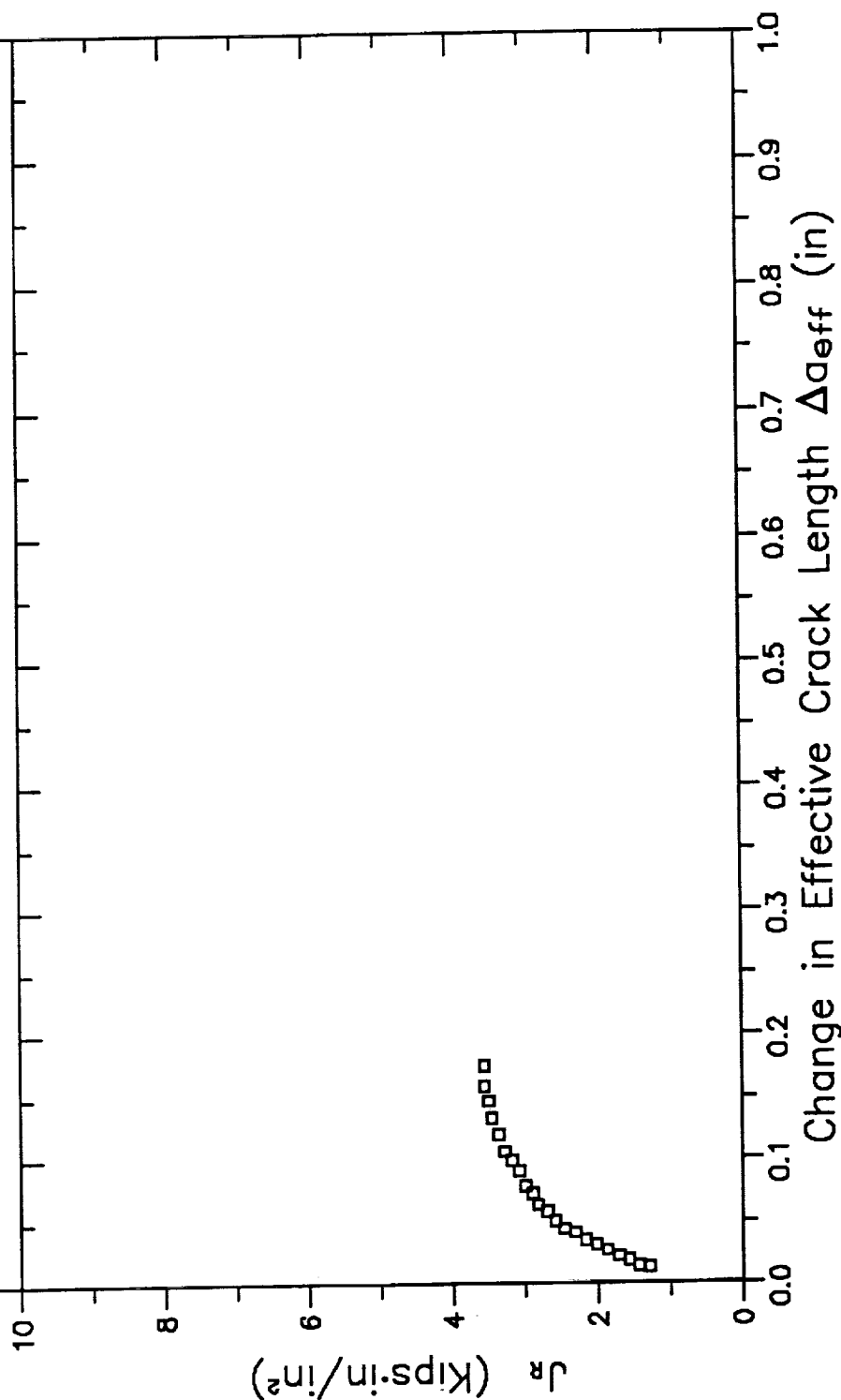


# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

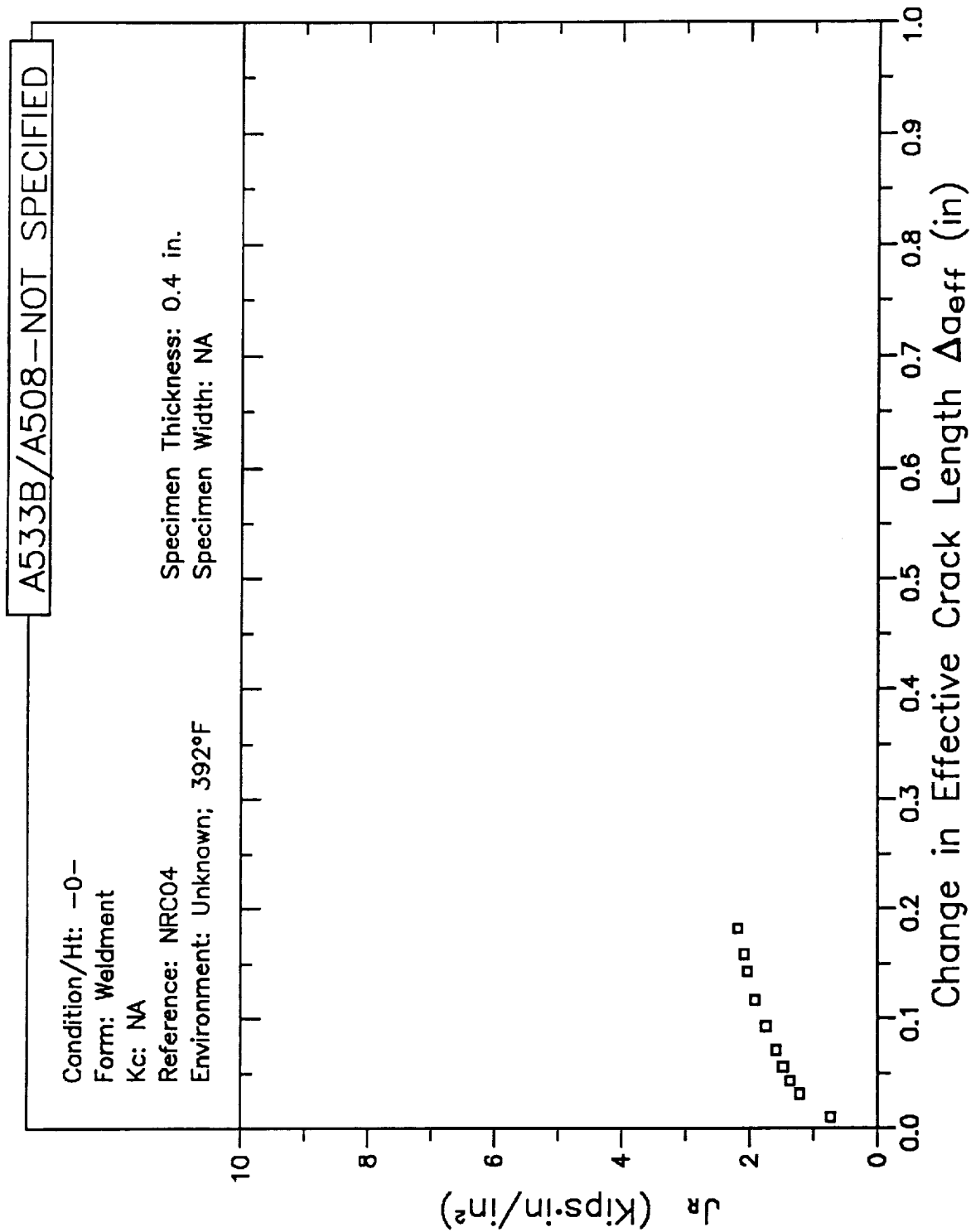
Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 392°F

Specimen Thickness: 0.4 in.  
Specimen Width: NA



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# RESISTANCE CURVE

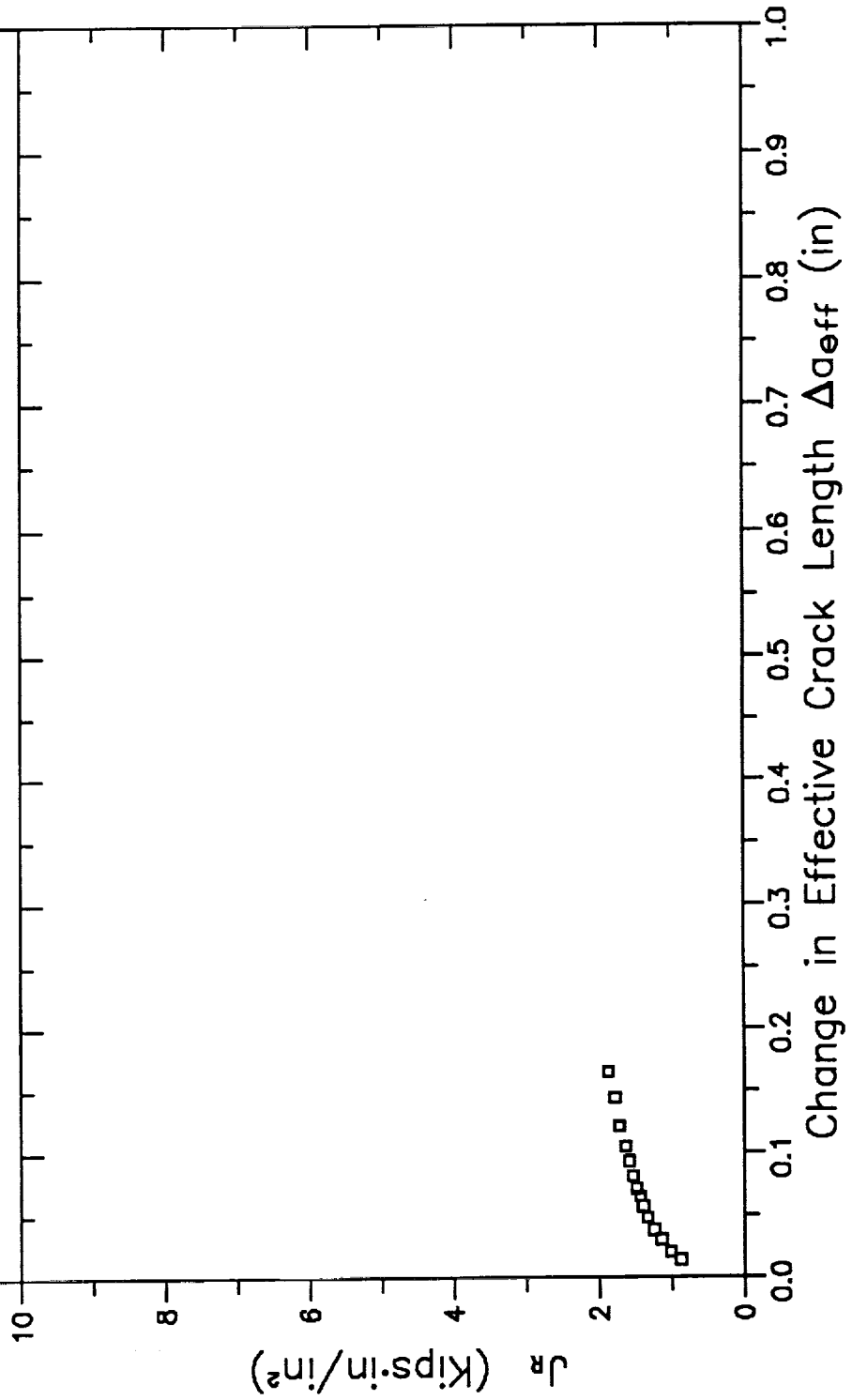


# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

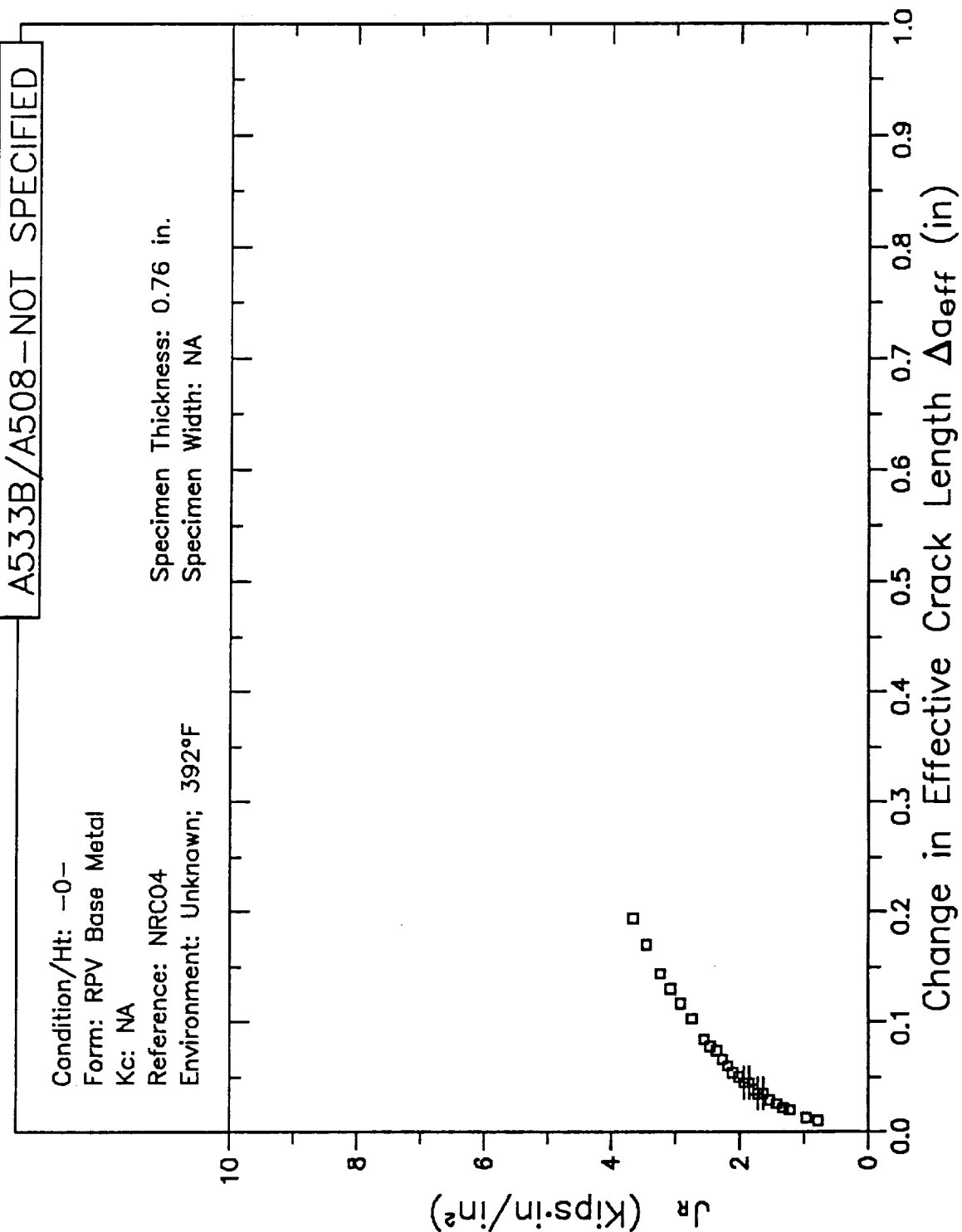
Condition/Hlt: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 392°F

Specimen Thickness: 0.405 in.  
Specimen Width: NA

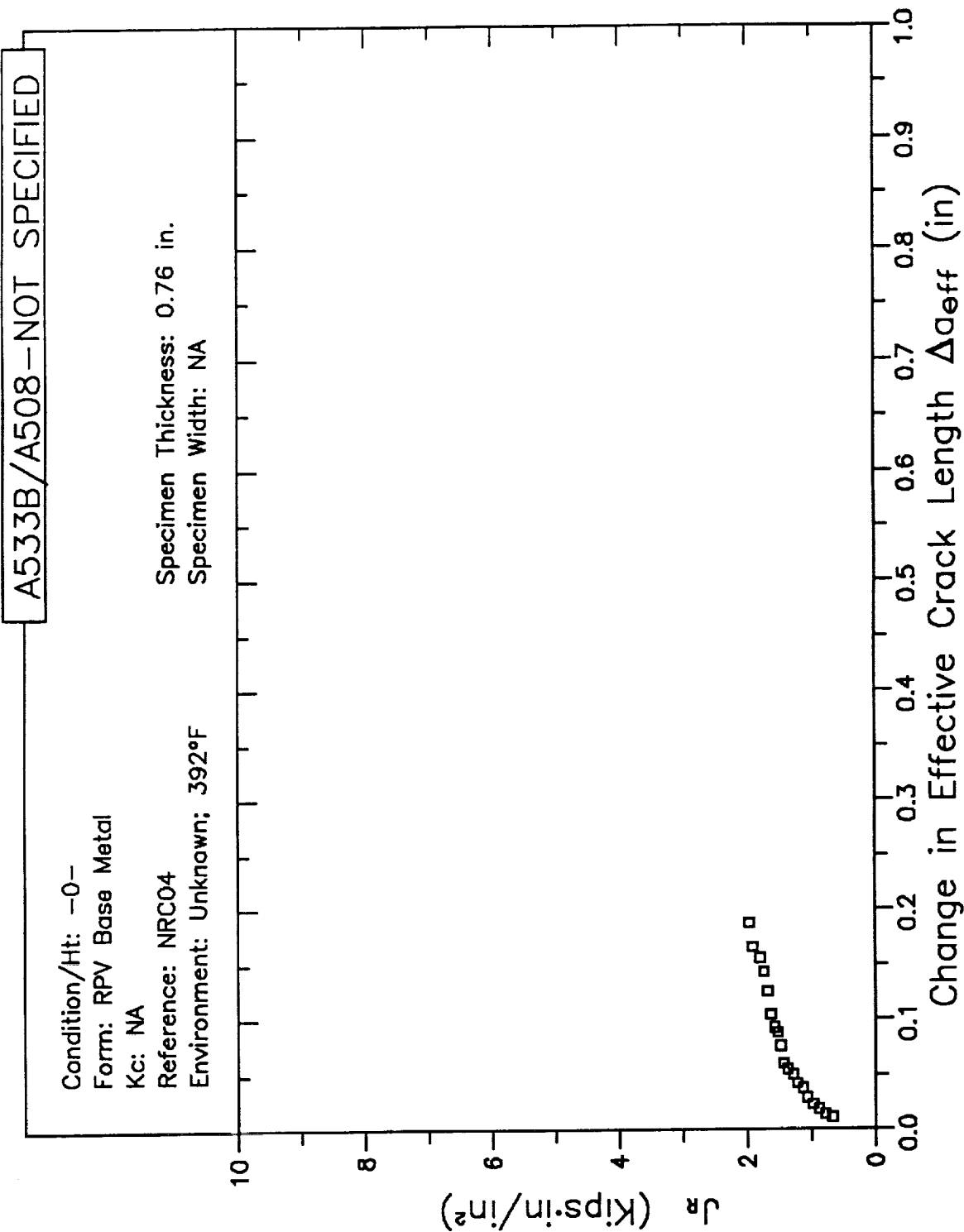




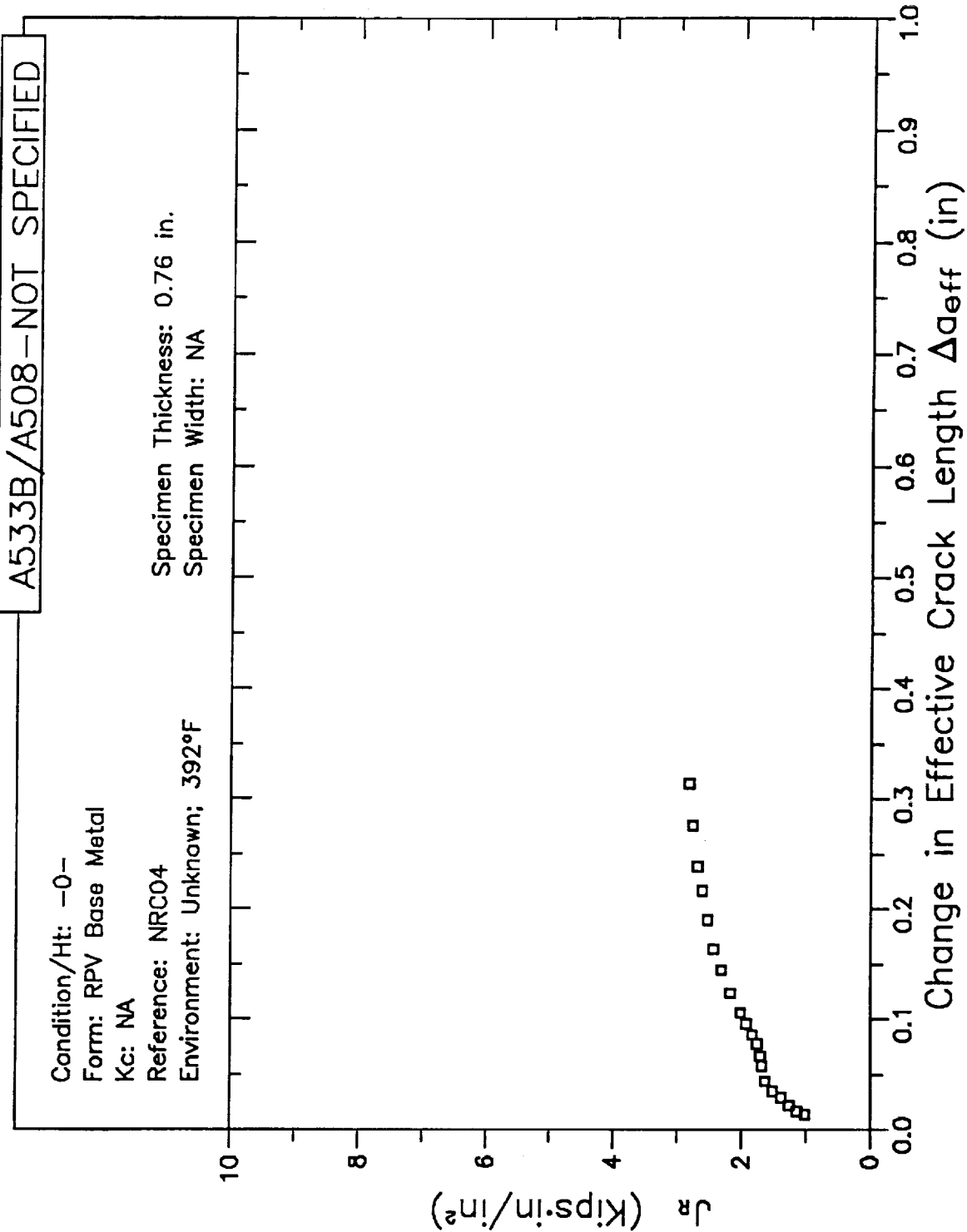
# RESISTANCE CURVE



# RESISTANCE CURVE



# RESISTANCE CURVE

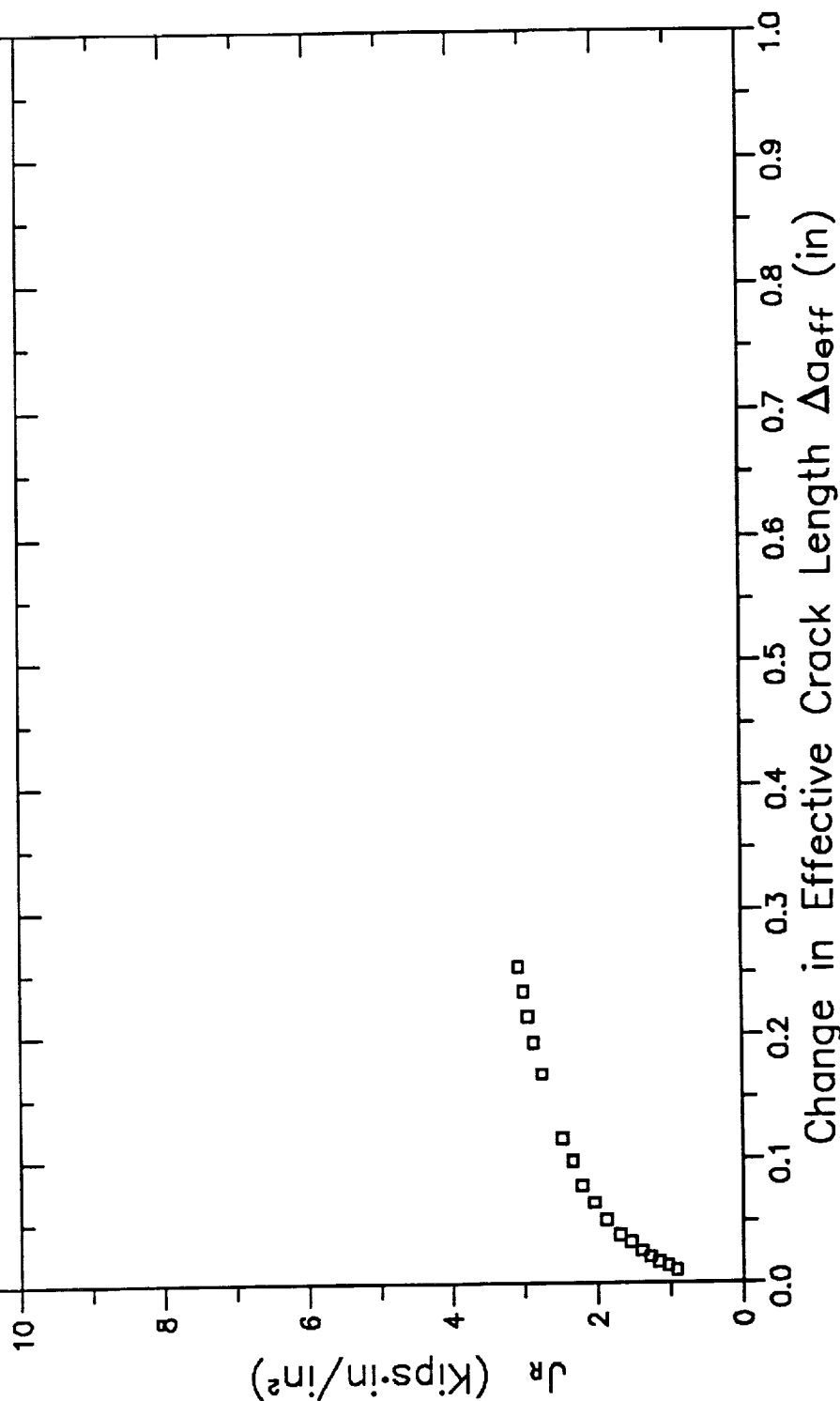


# RESISTANCE CURVE

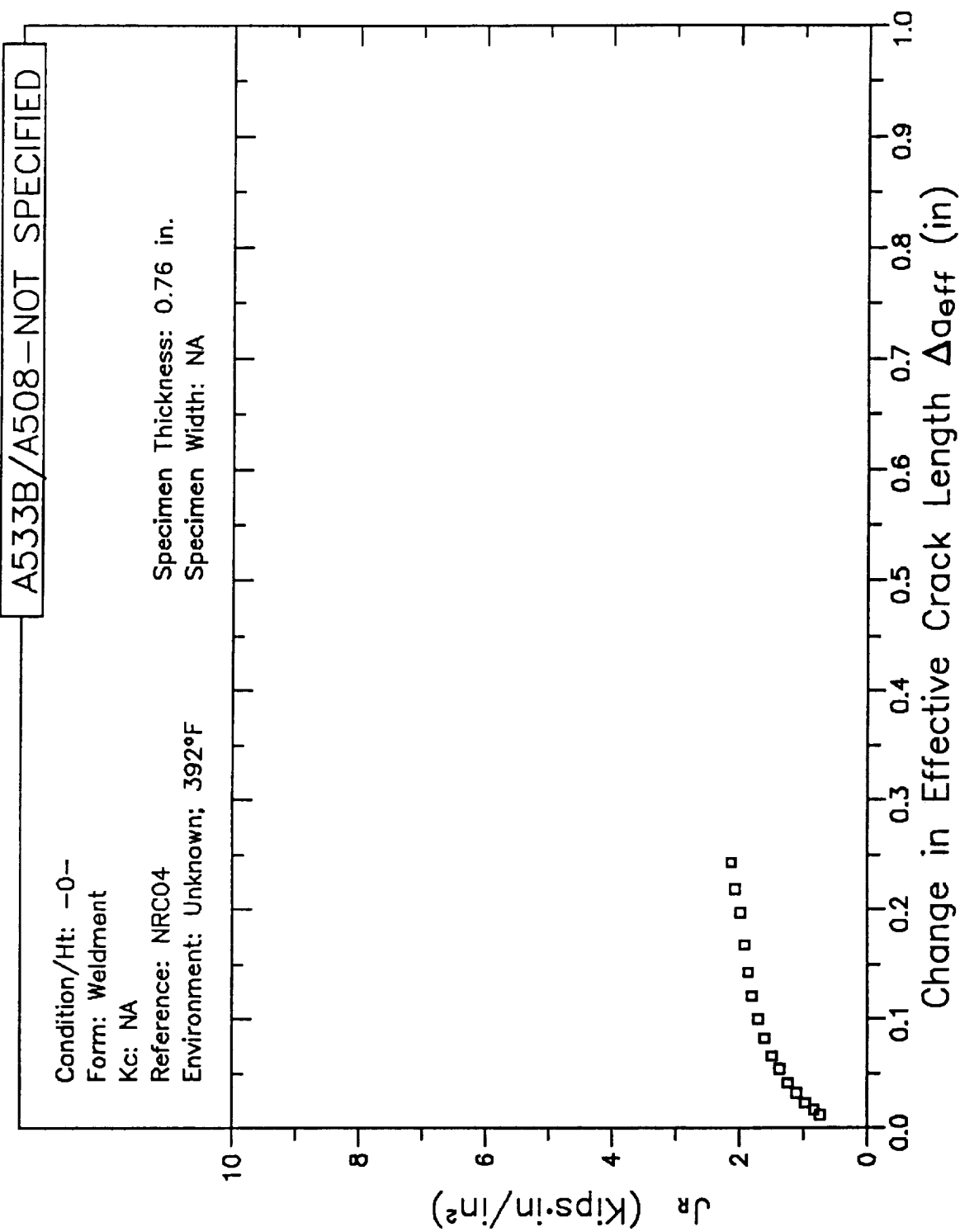
A533B/A508—NOT SPECIFIED

Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 392°F

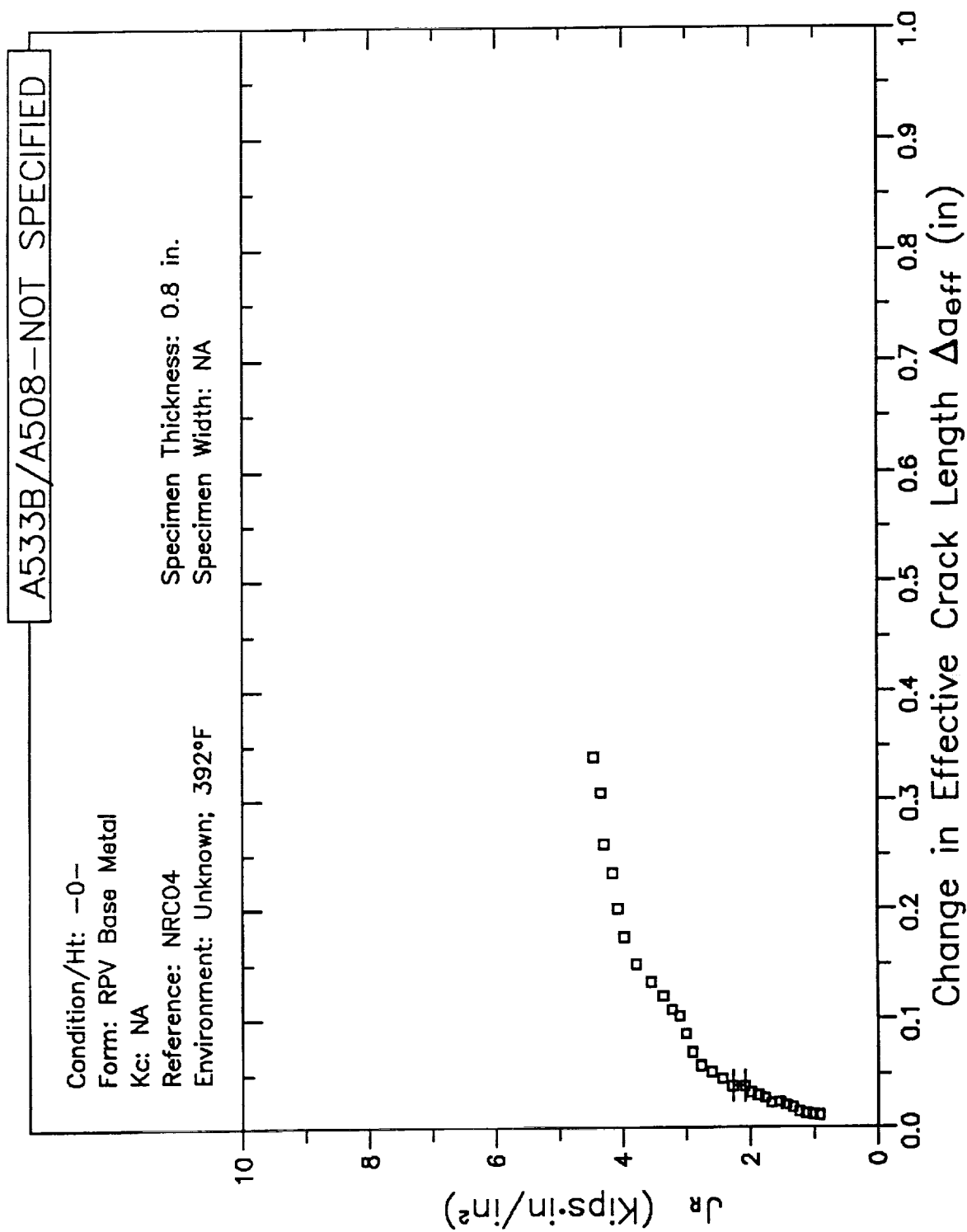
Specimen Thickness: 0.76 in.  
Specimen Width: NA



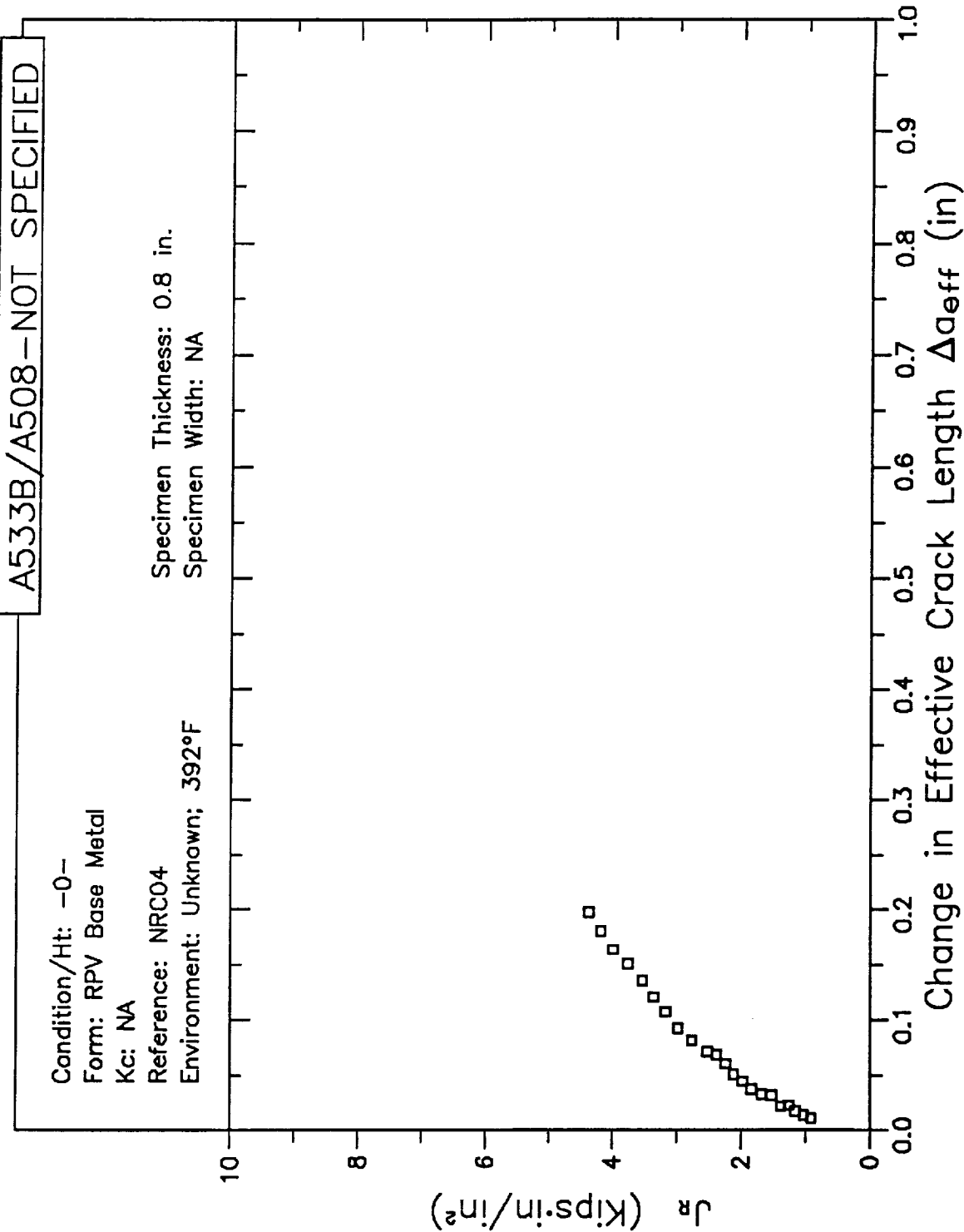
# RESISTANCE CURVE



# RESISTANCE CURVE



# RESISTANCE CURVE

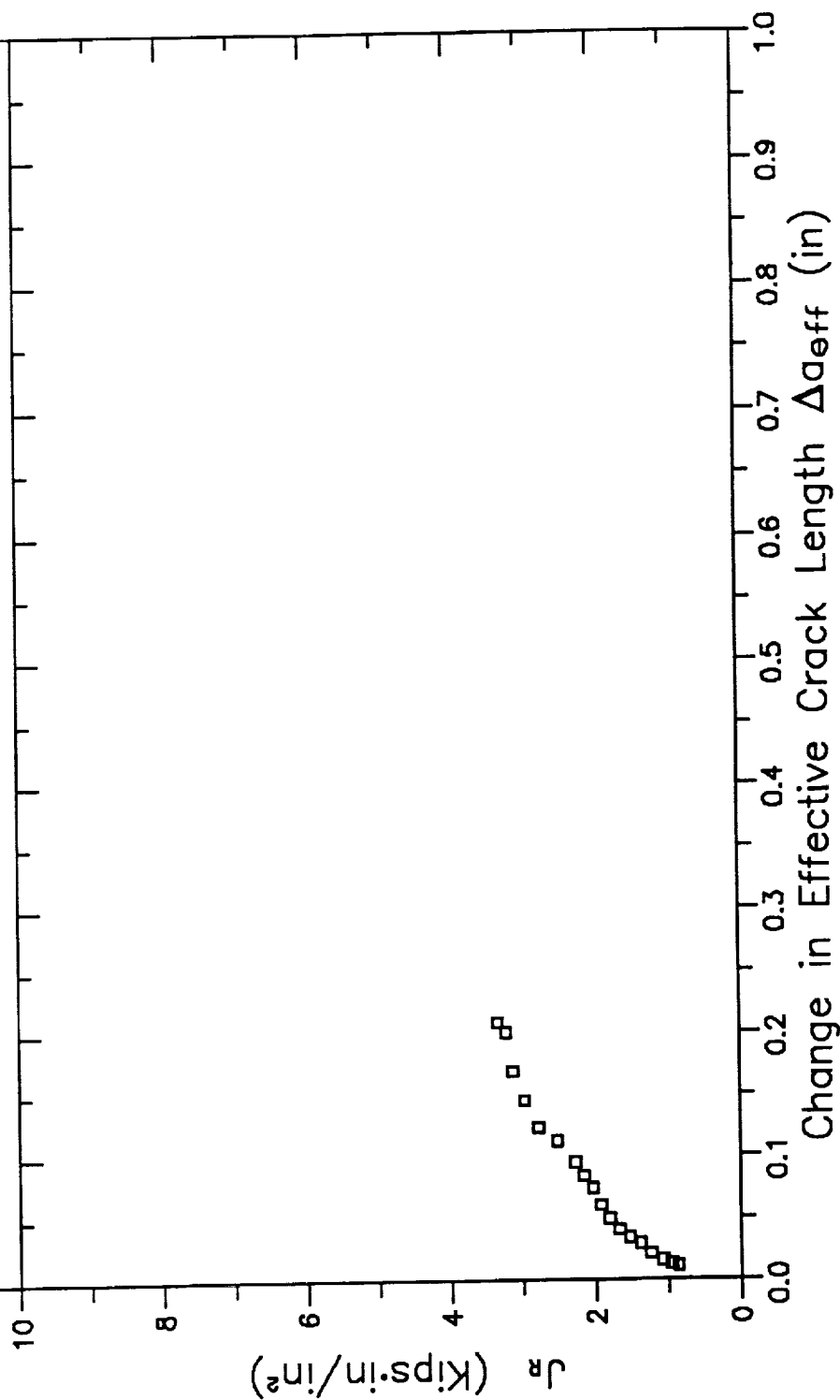


# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

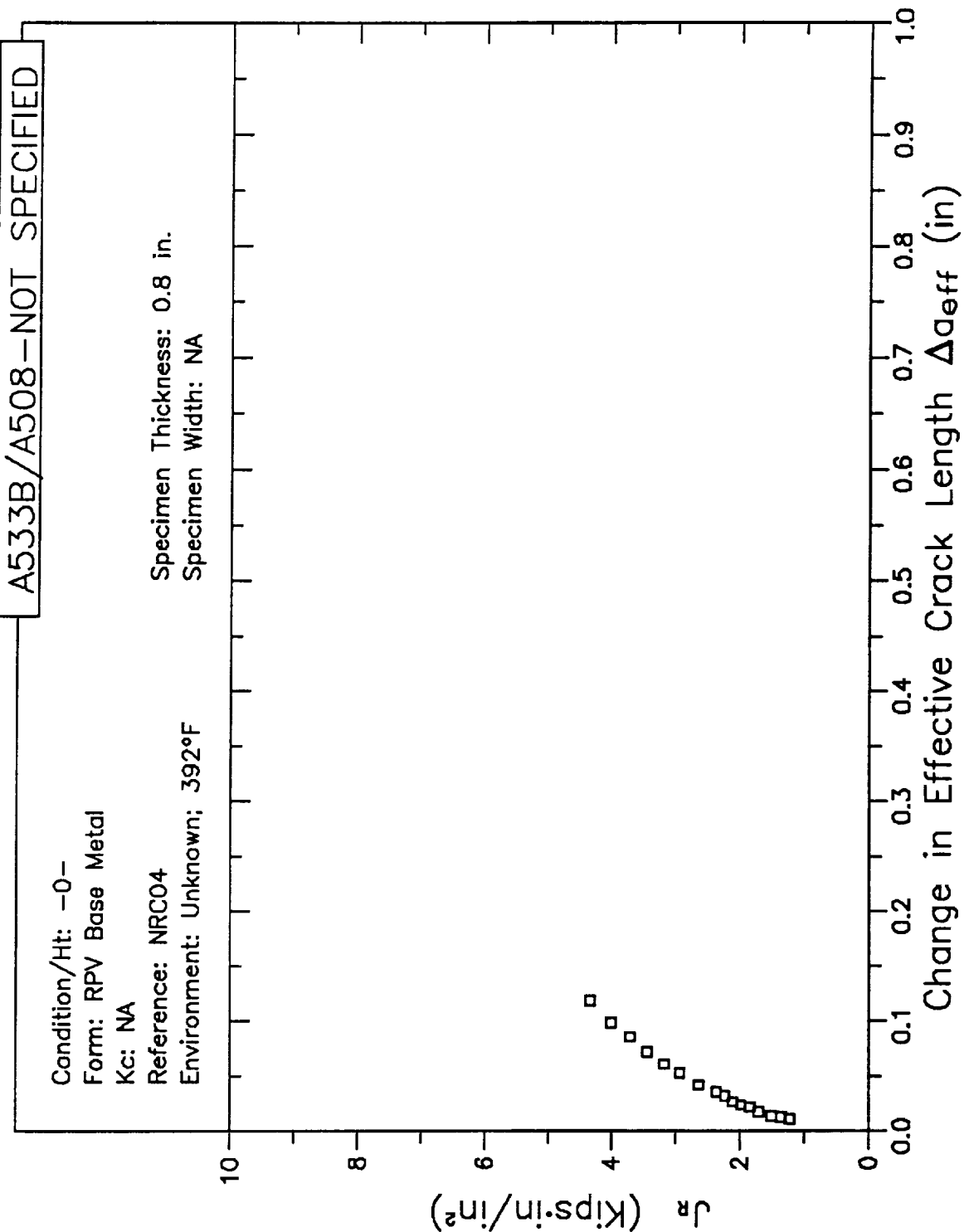
Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 392°F

Specimen Thickness: 0.8 in.  
Specimen Width: NA





# RESISTANCE CURVE

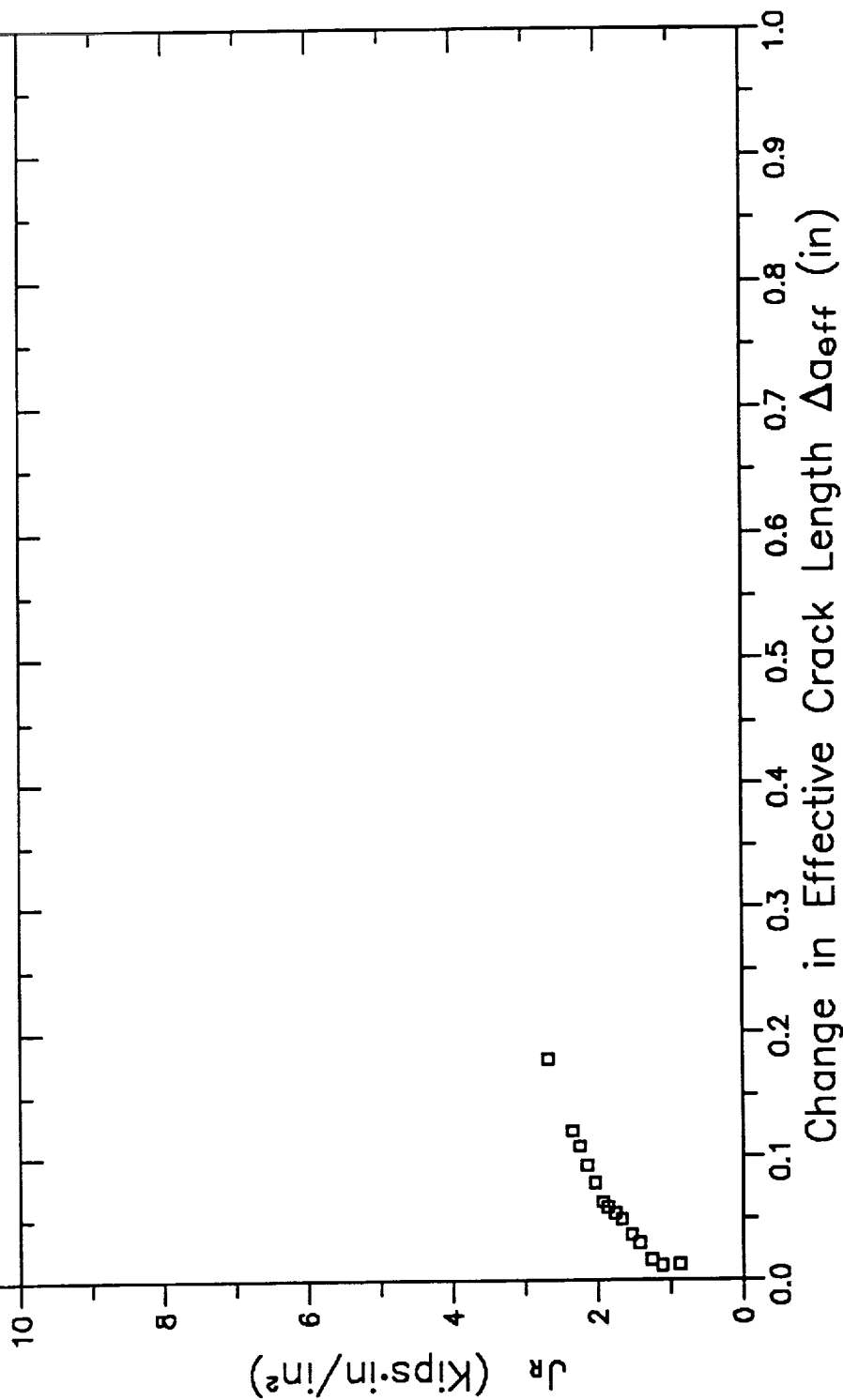


# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

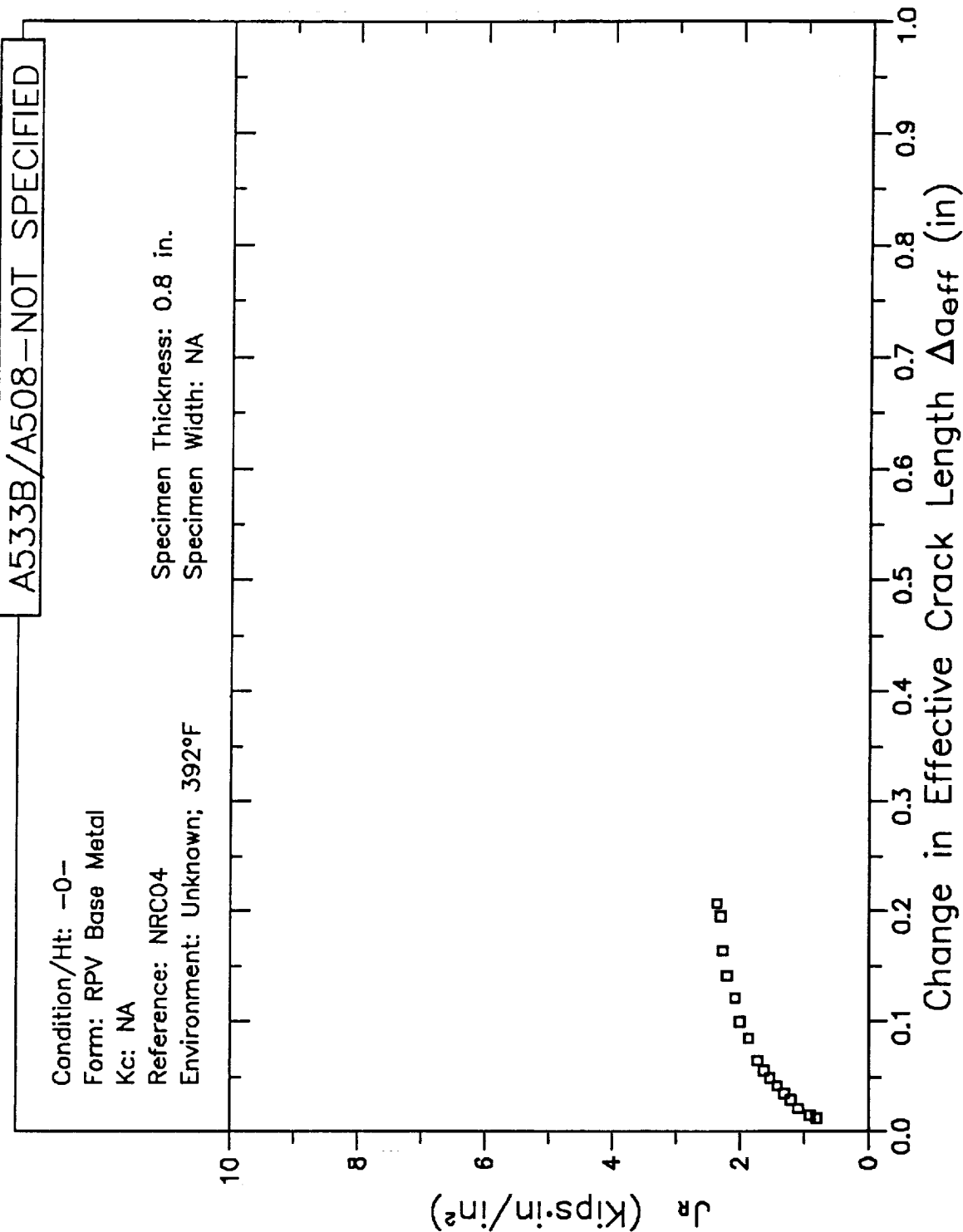
Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 392°F

Specimen Thickness: 0.8 in.  
Specimen Width: NA

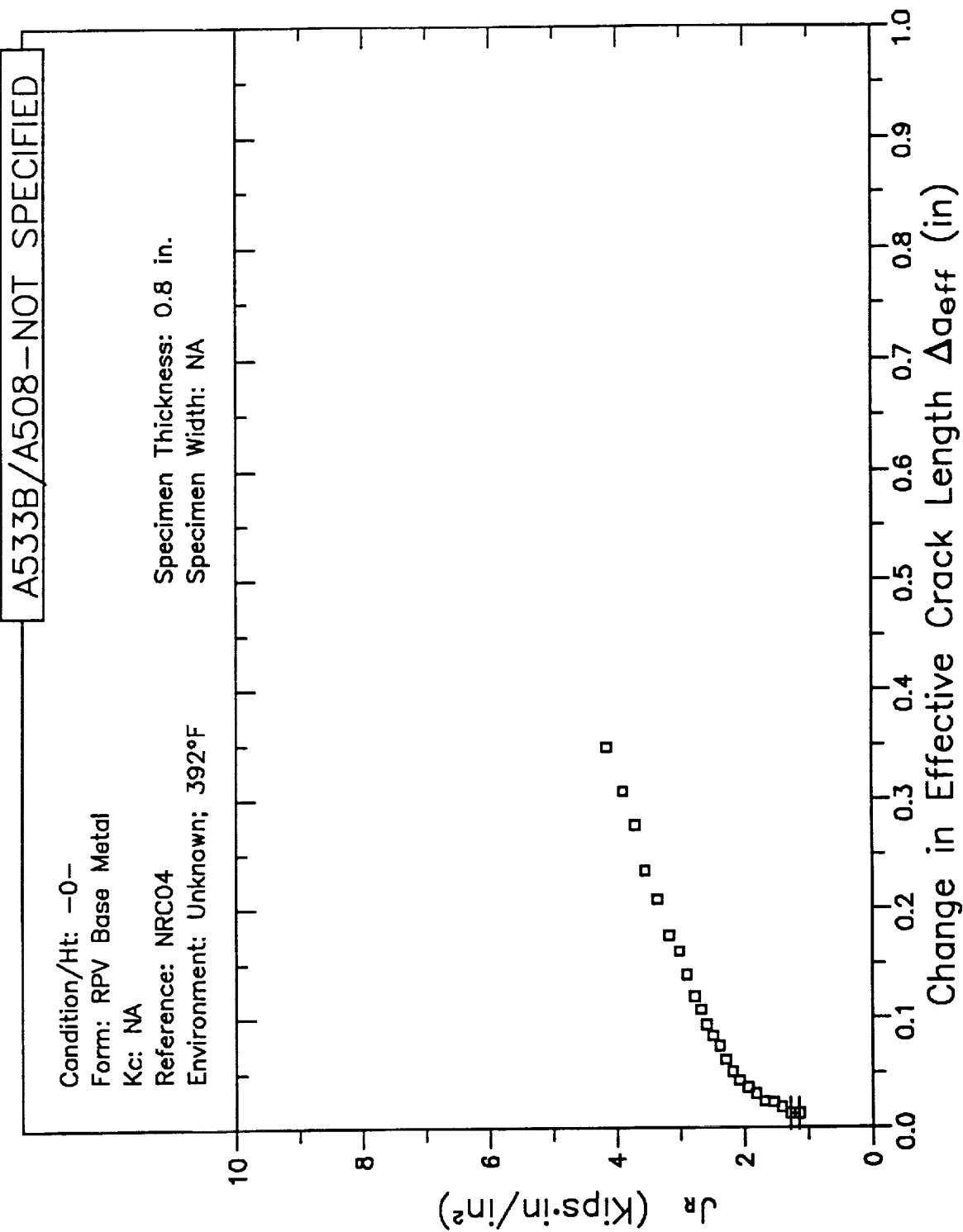


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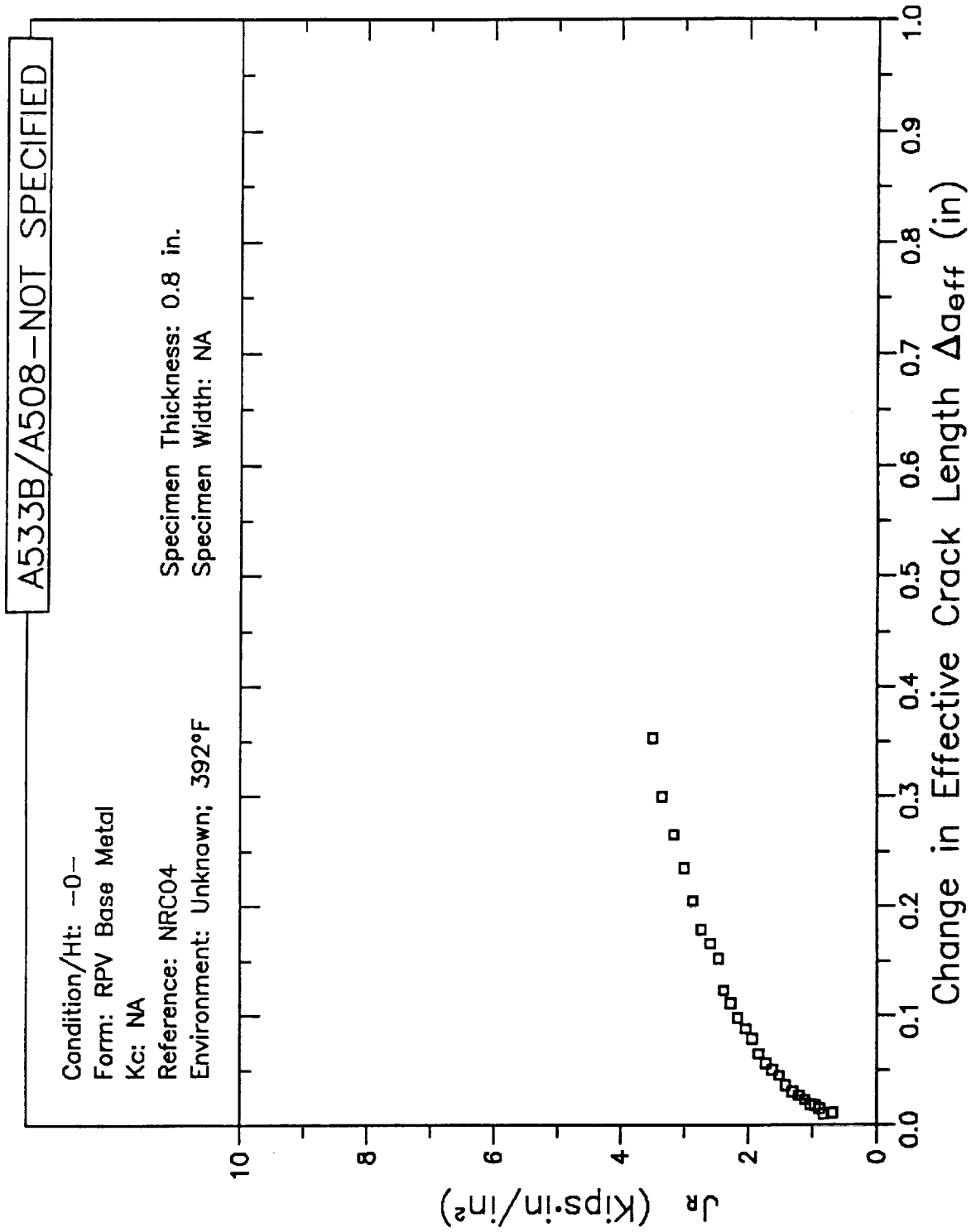
# RESISTANCE CURVE



# RESISTANCE CURVE



# RESISTANCE CURVE

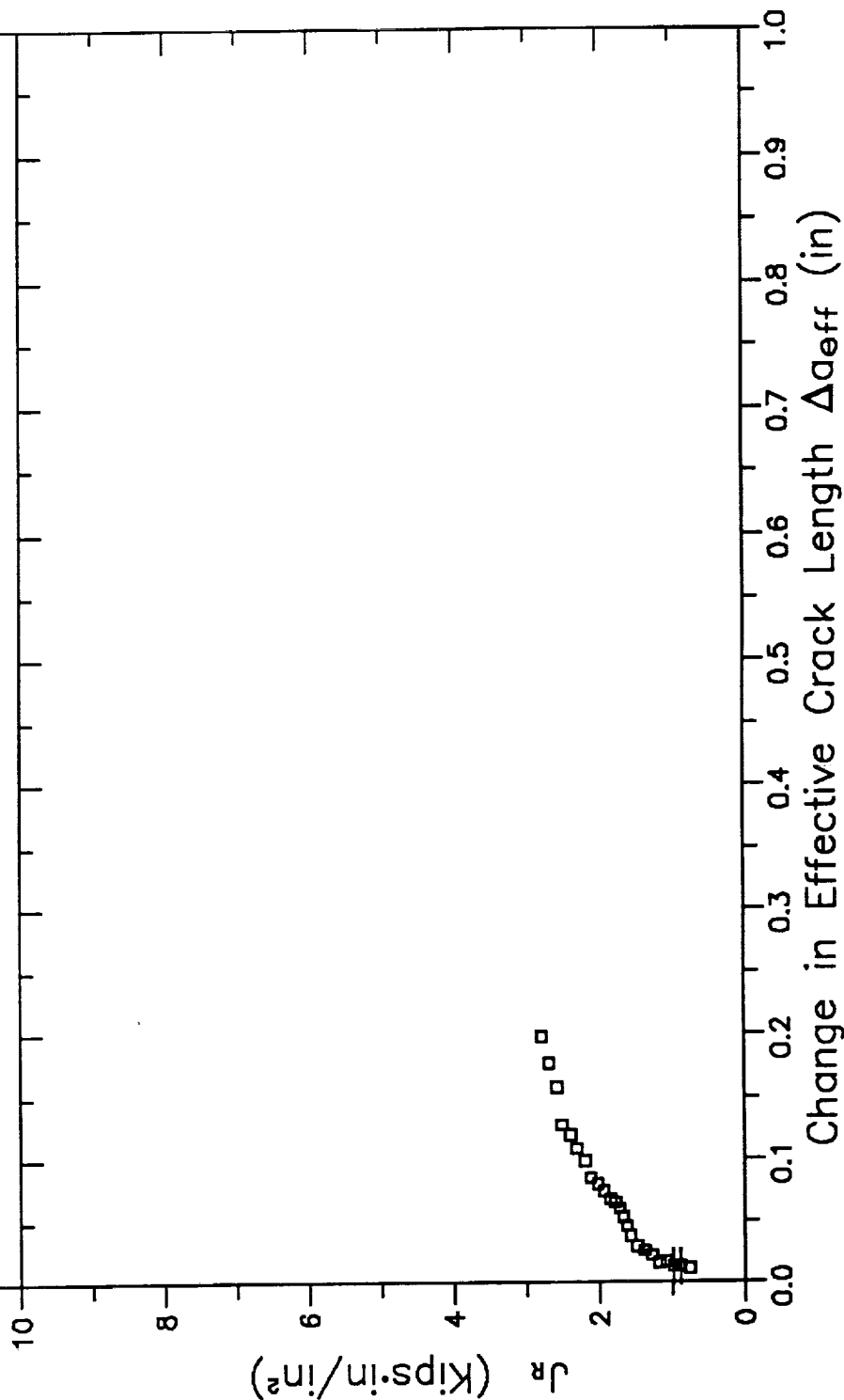


# RESISTANCE CURVE

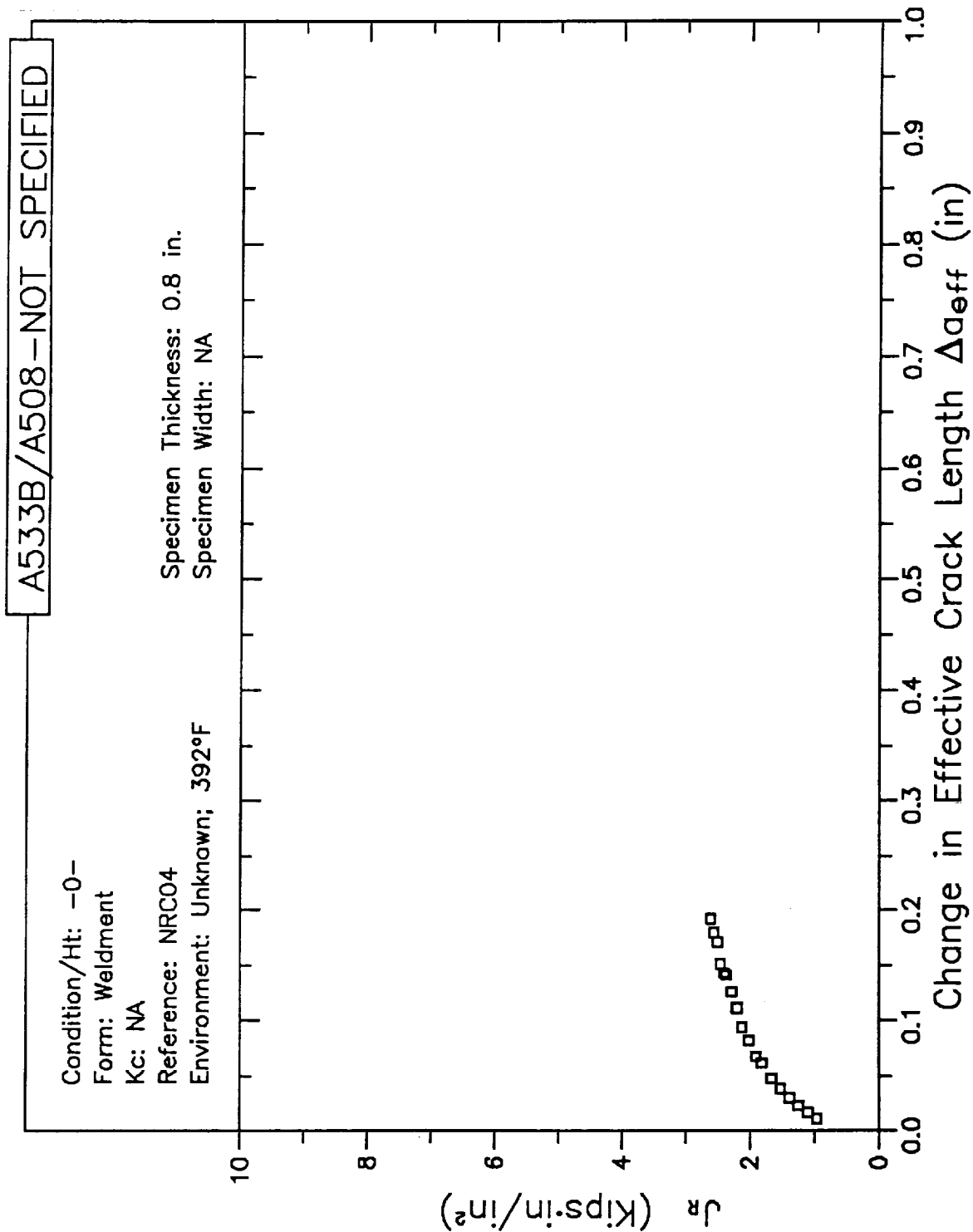
A533B/A508—NOT SPECIFIED

Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 392°F

Specimen Thickness: 0.8 in.  
Specimen Width: NA



# RESISTANCE CURVE

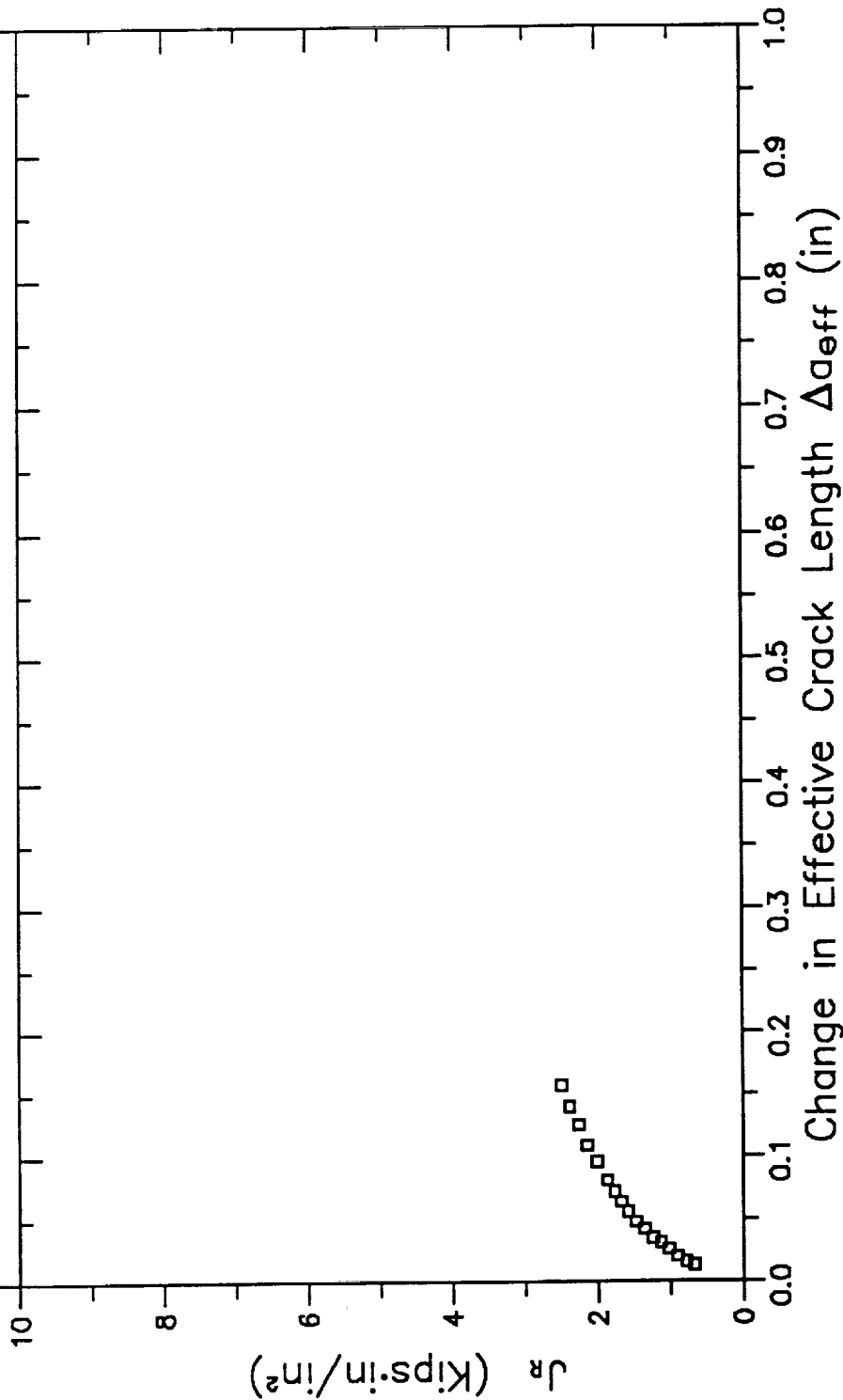


# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

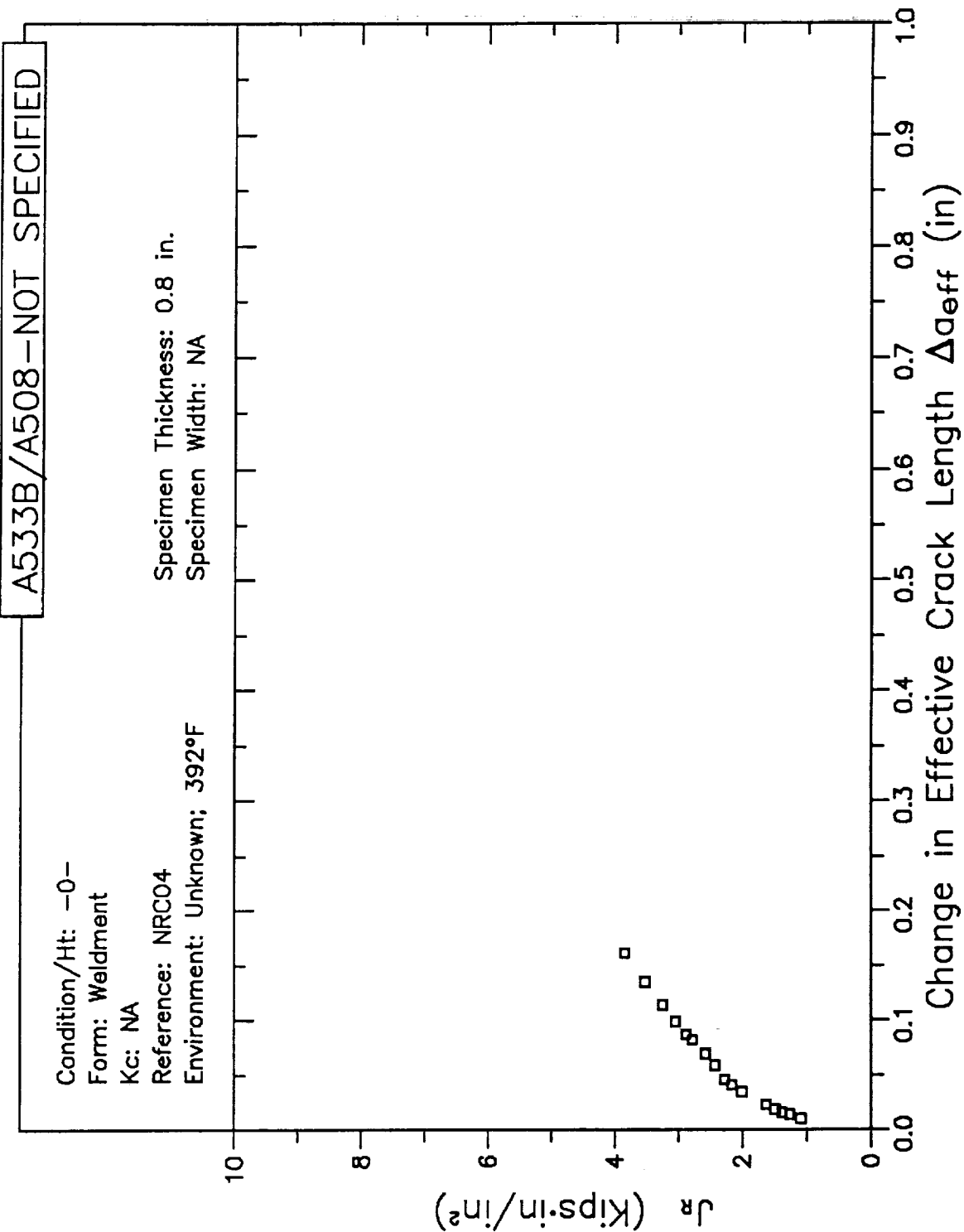
Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 392°F

Specimen Thickness: 0.8 in.  
Specimen Width: NA

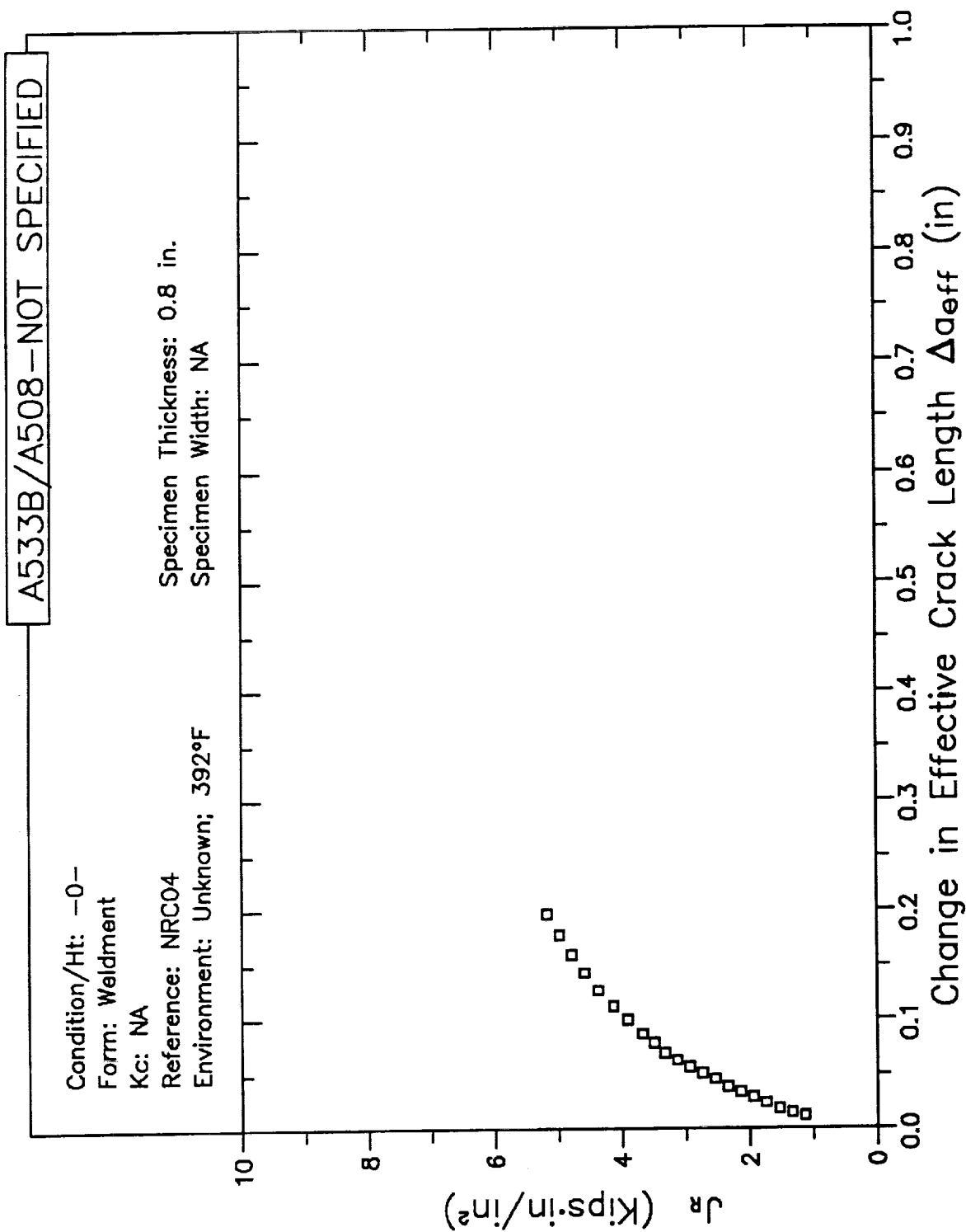




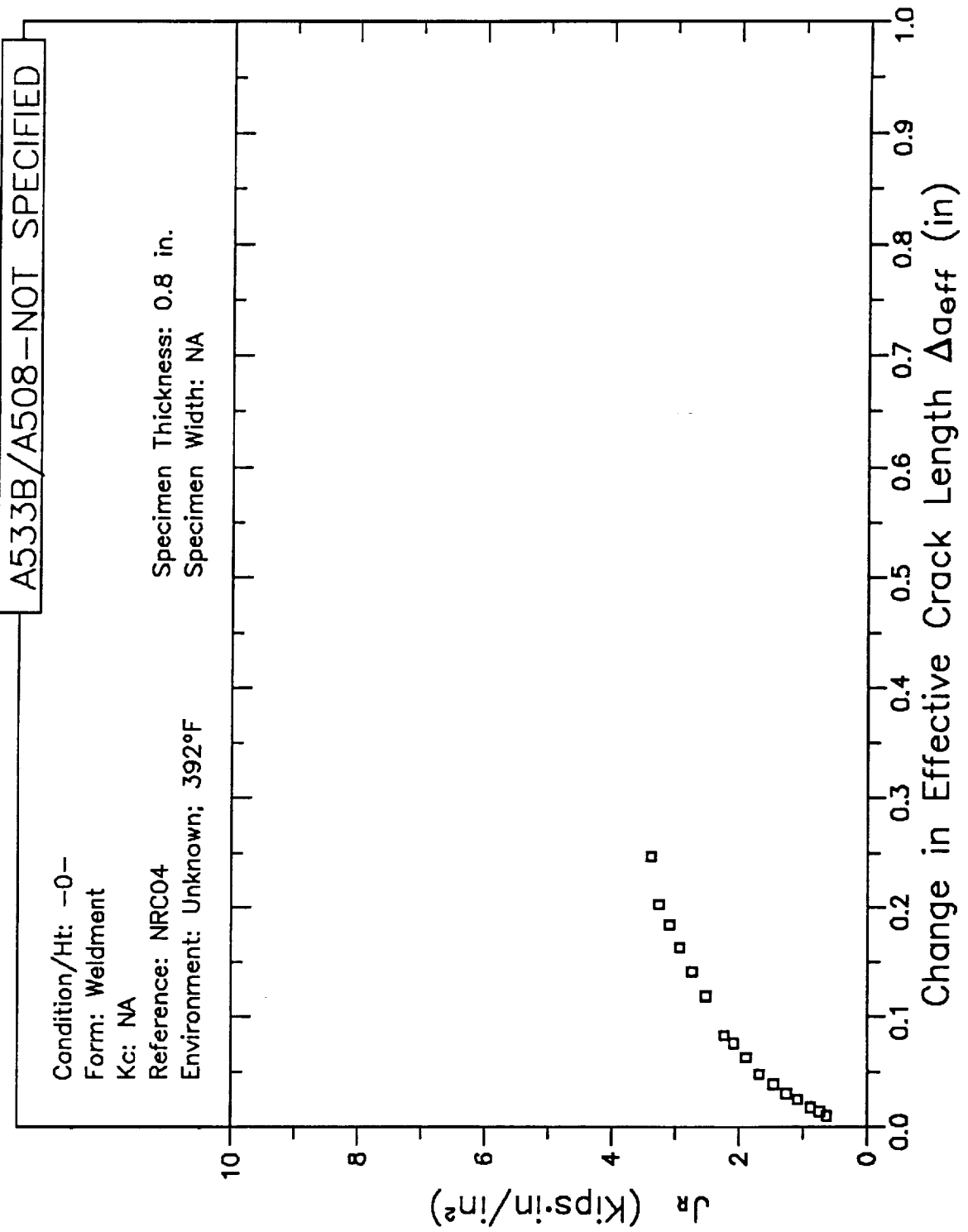
# RESISTANCE CURVE



# RESISTANCE CURVE



# RESISTANCE CURVE

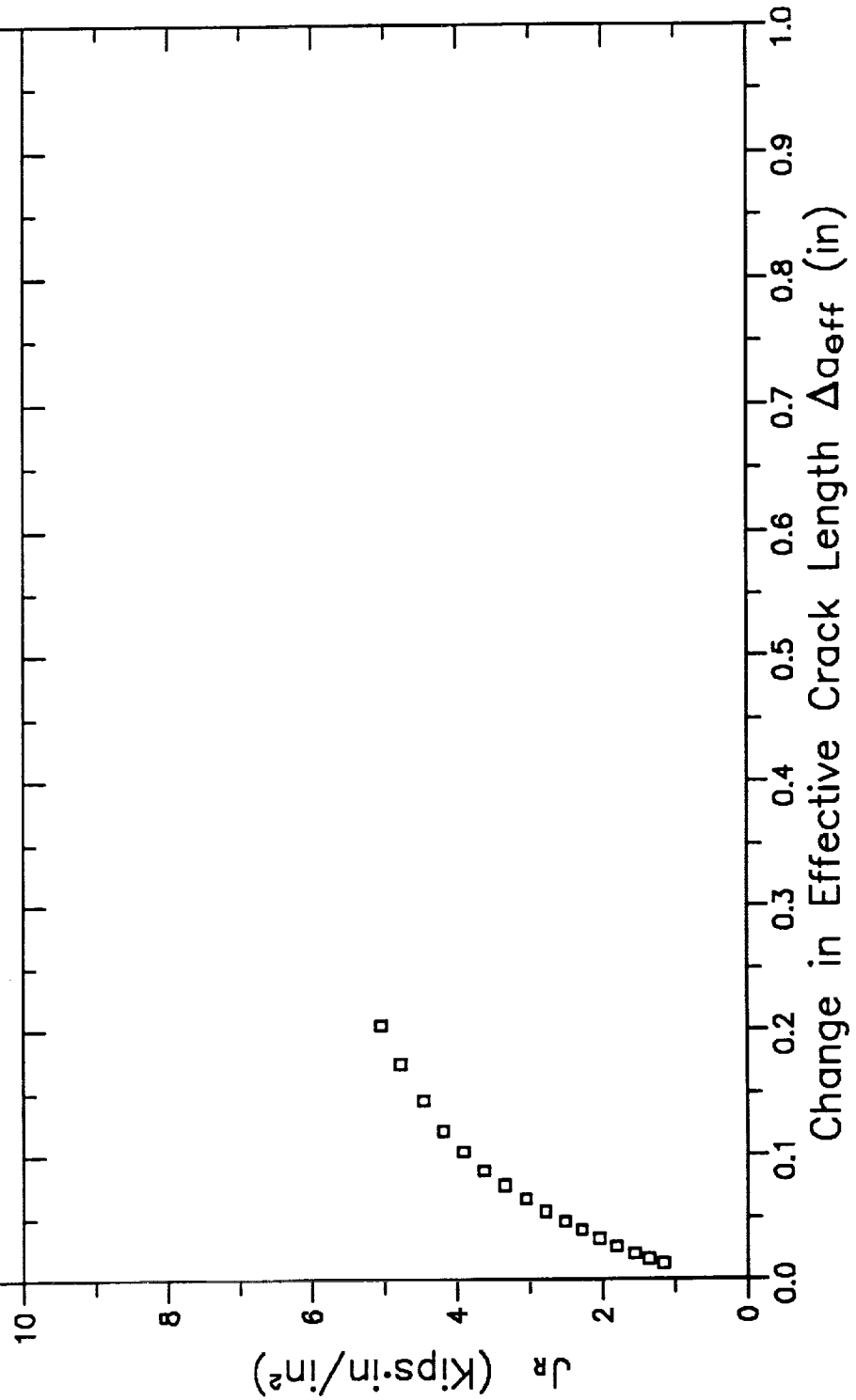


# RESISTANCE CURVE

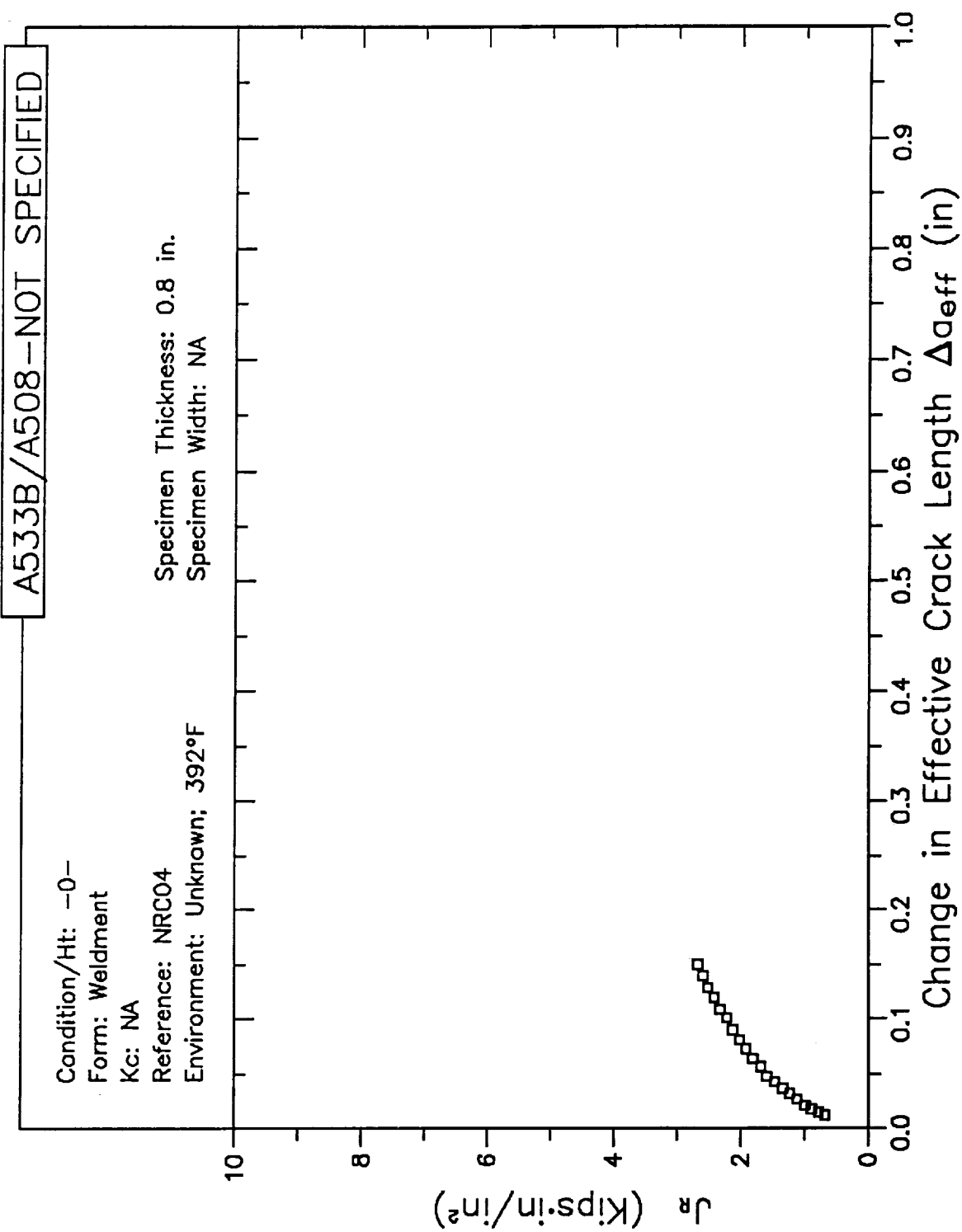
A533B/A508—NOT SPECIFIED

Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 392°F

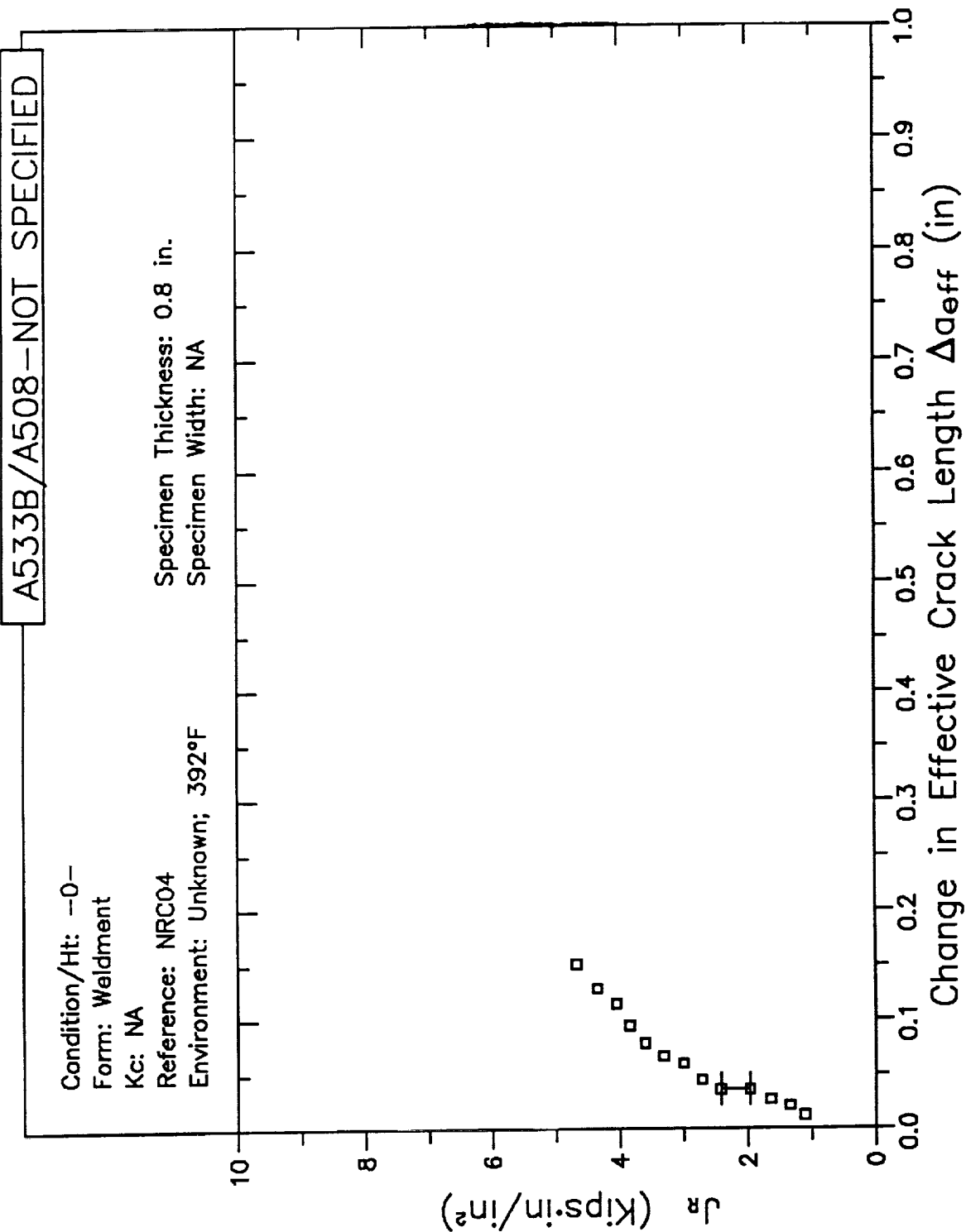
Specimen Thickness: 0.8 in.  
Specimen Width: NA



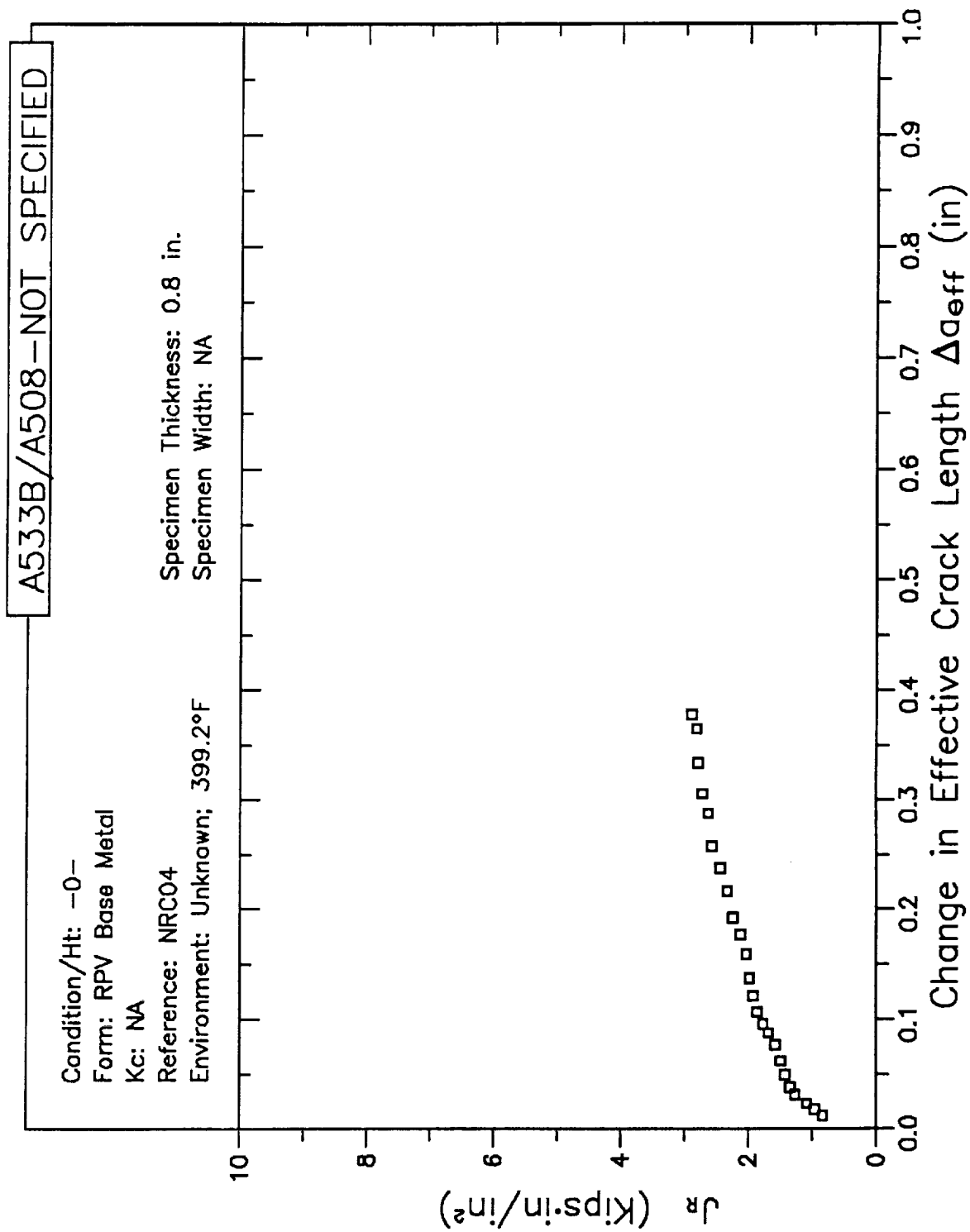
# RESISTANCE CURVE



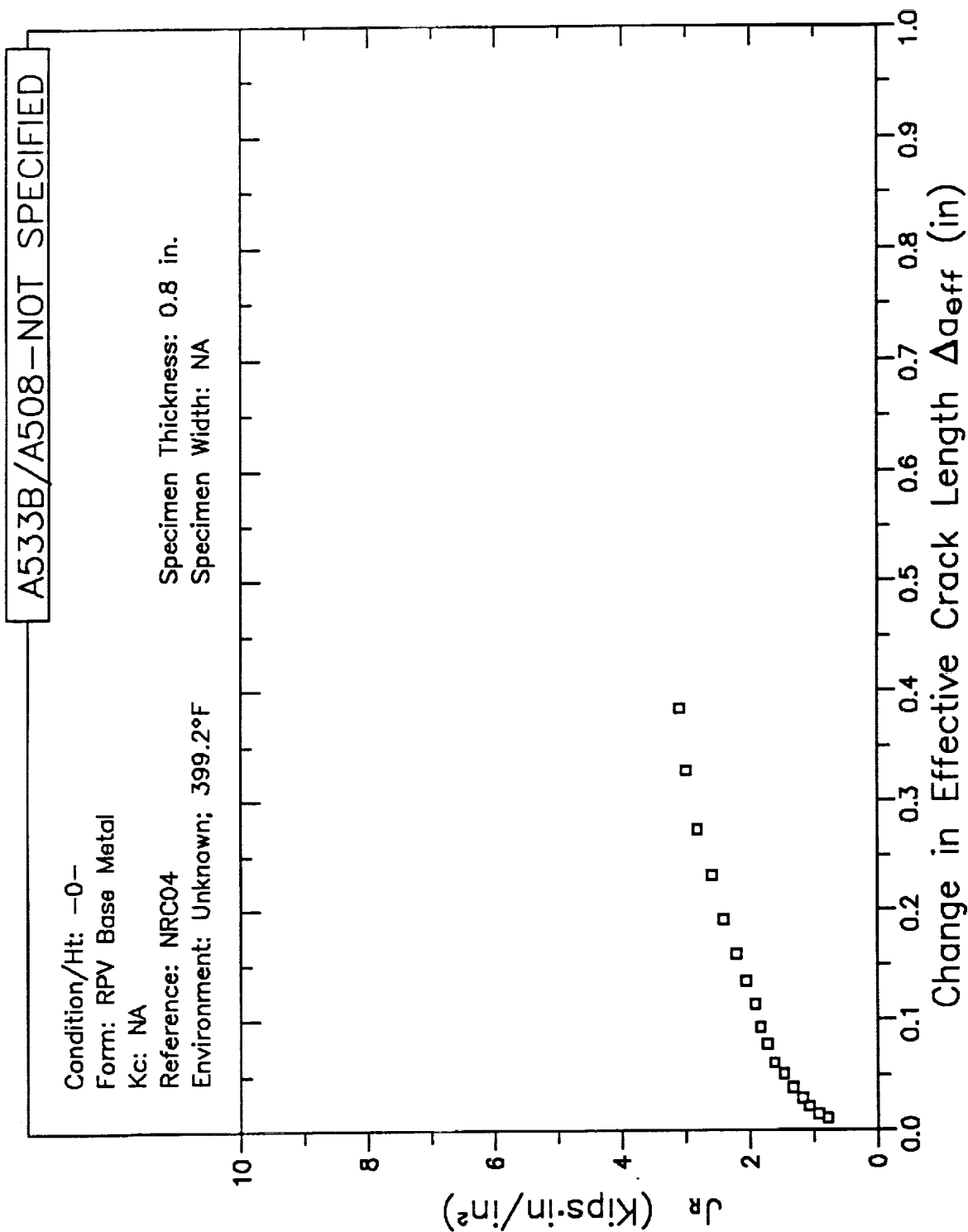
# RESISTANCE CURVE



# RESISTANCE CURVE



# RESISTANCE CURVE





# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

Condition/Ht: -0-

Form: RPV Base Metal

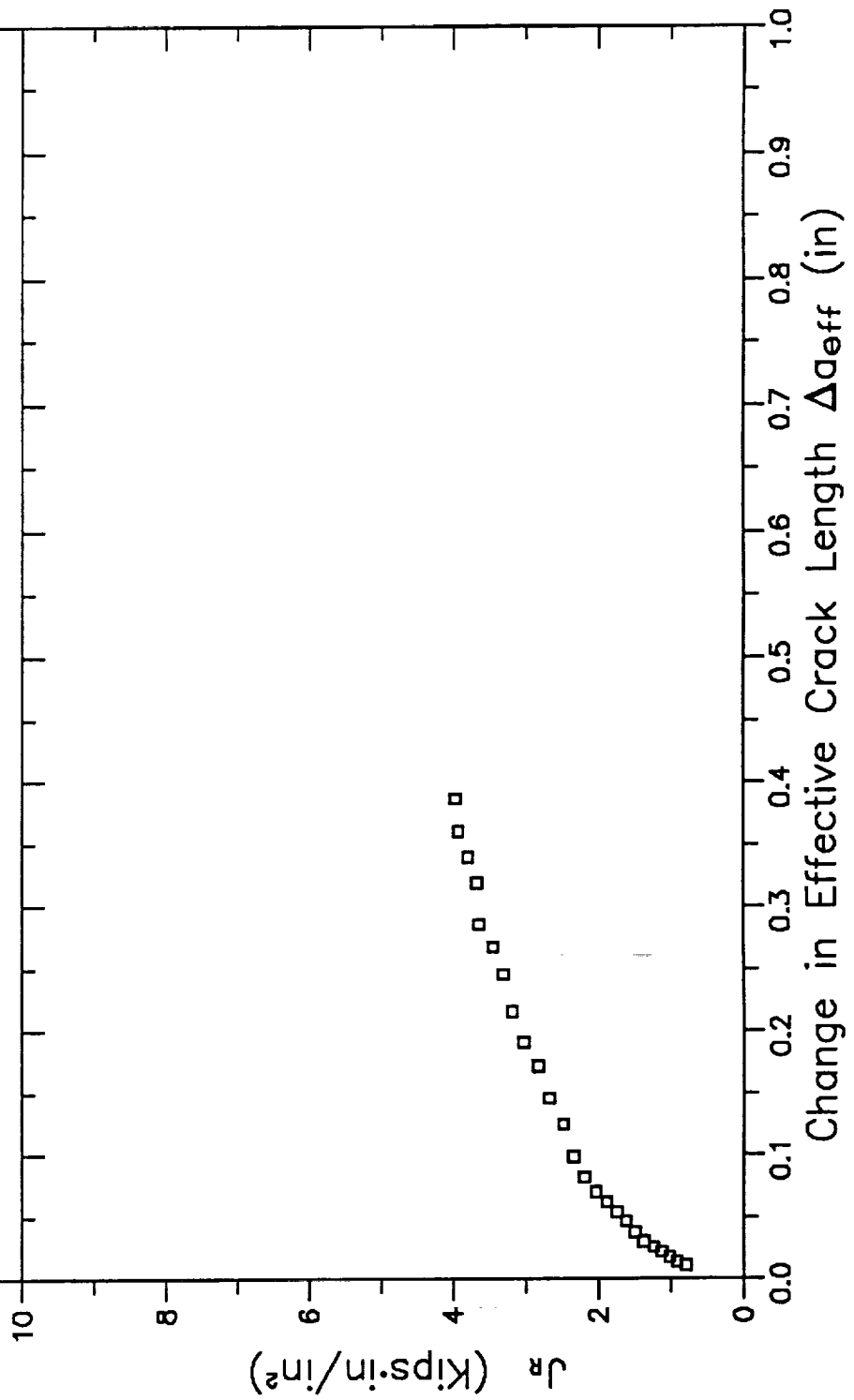
Kc: NA

Reference: NRC04

Environment: Unknown; 399.2°F

Specimen Thickness: 0.8 in.

Specimen Width: NA

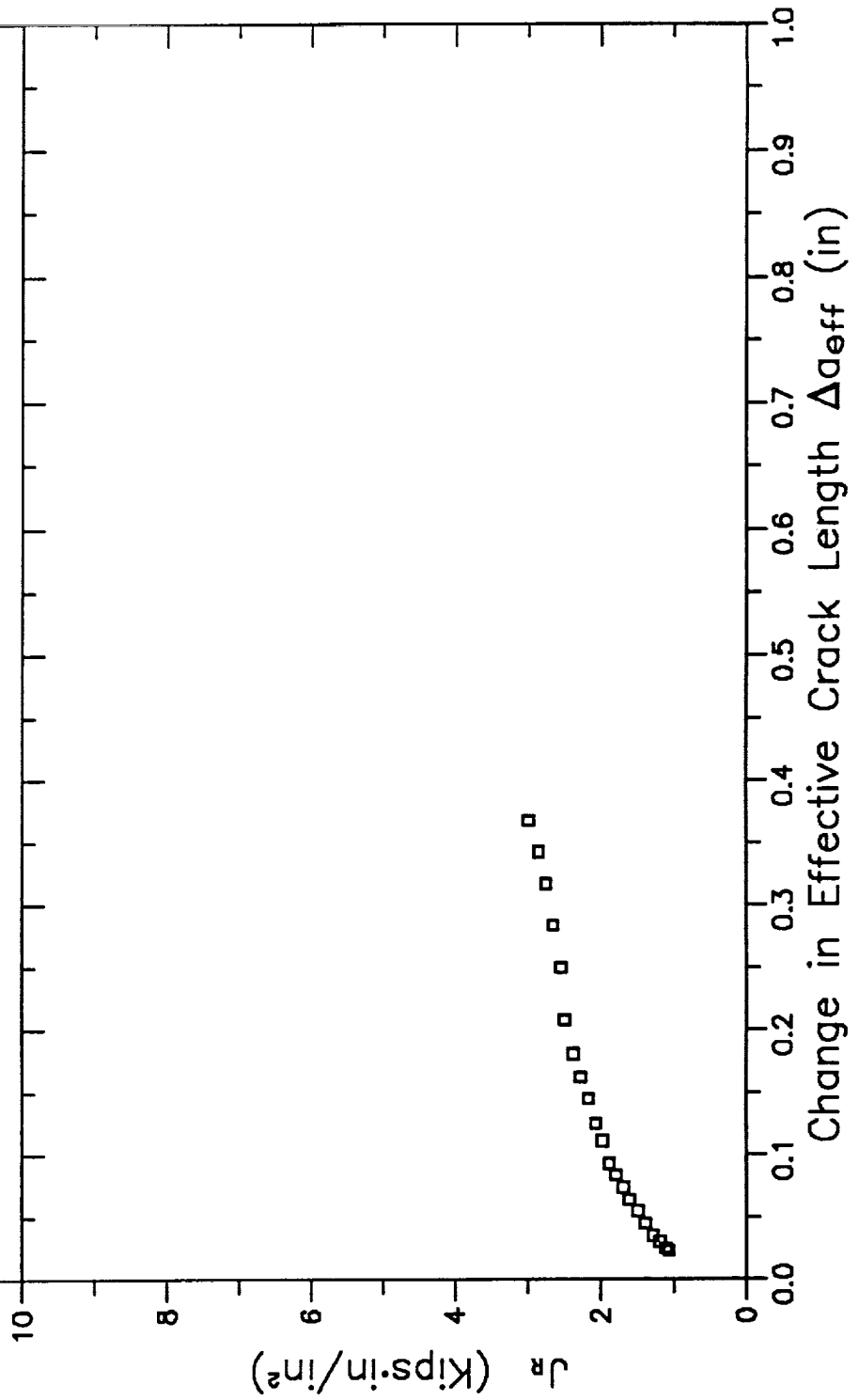


# RESISTANCE CURVE

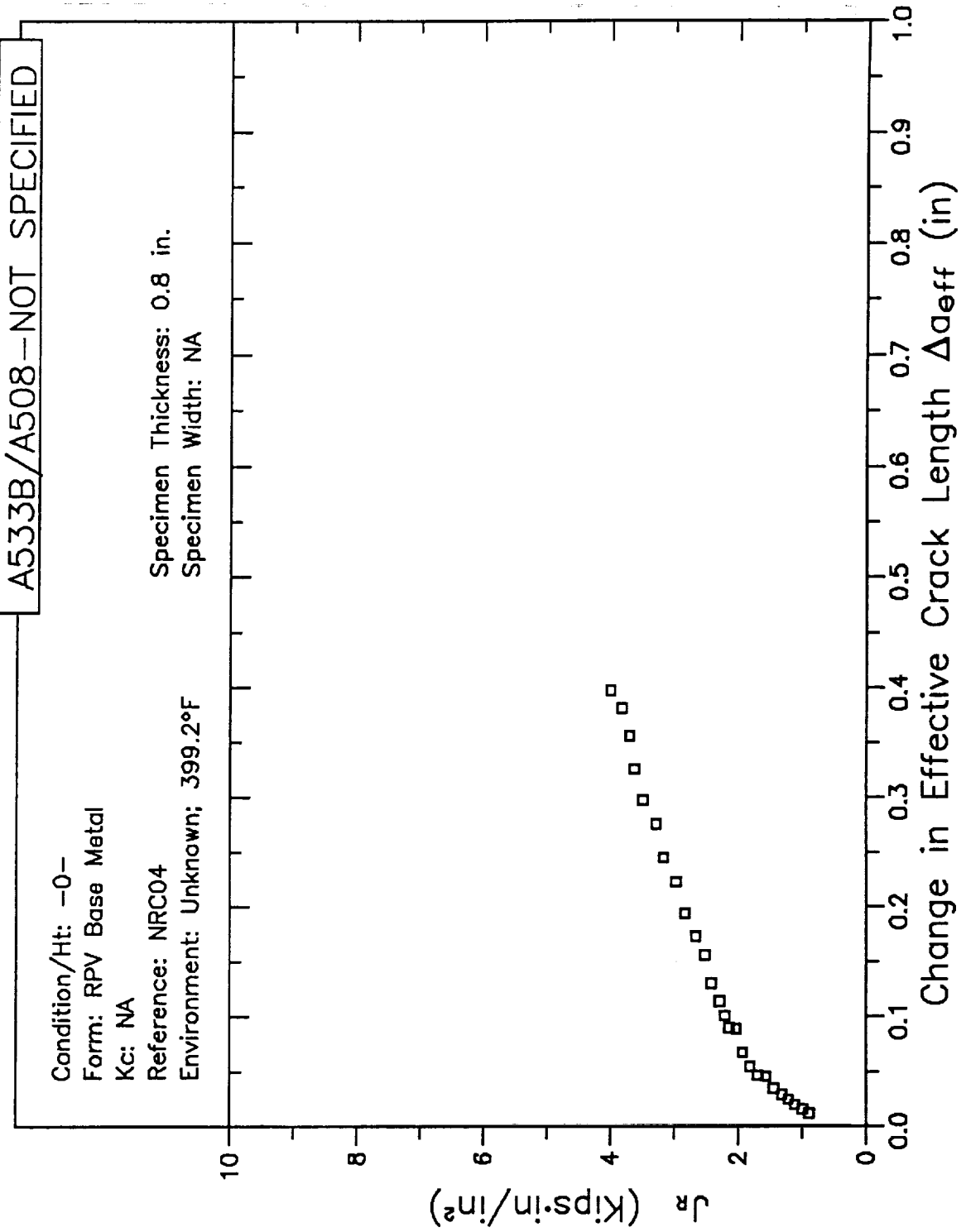
A533B/A508—NOT SPECIFIED

Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 399.2°F

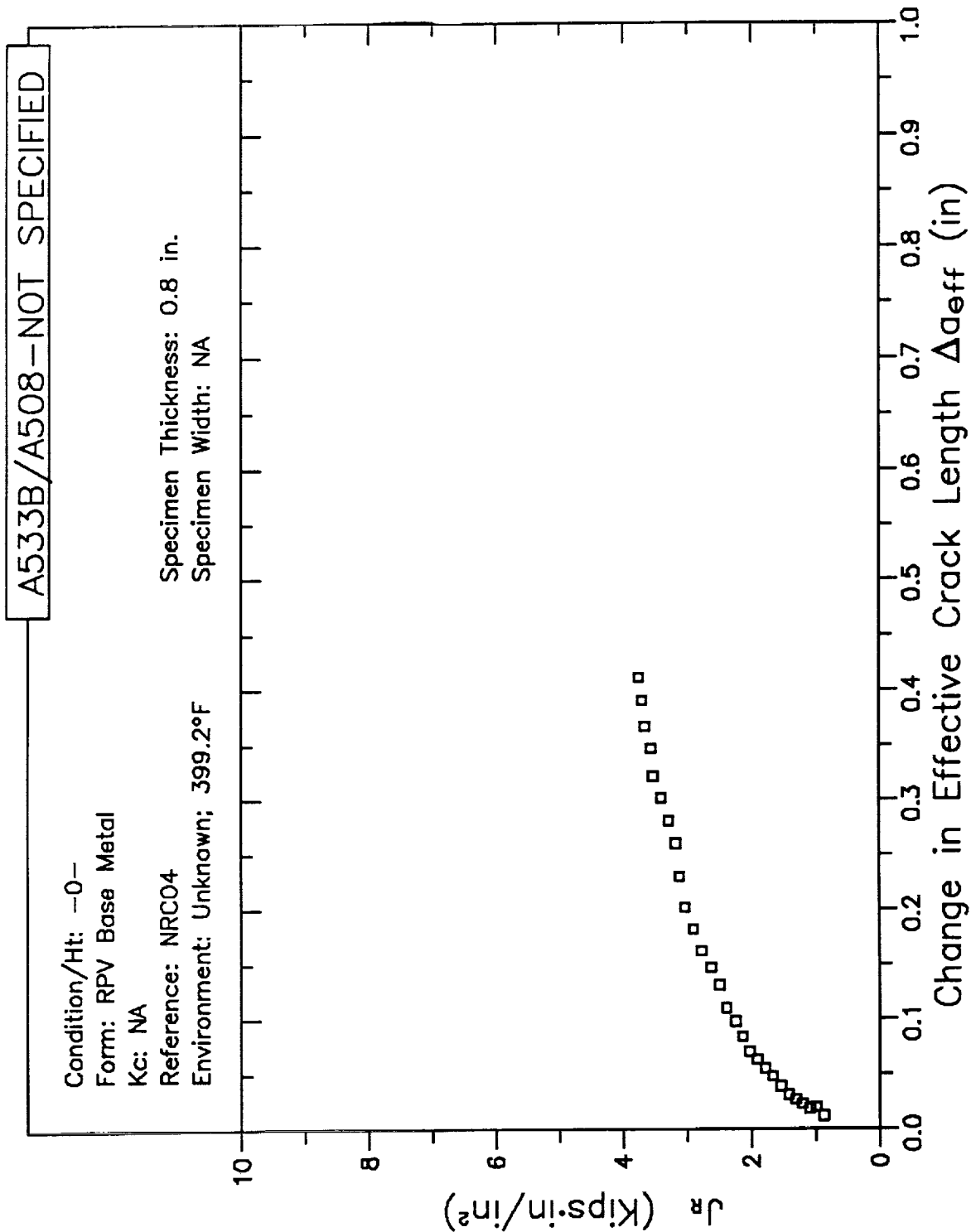
Specimen Thickness: 0.8 in.  
Specimen Width: NA



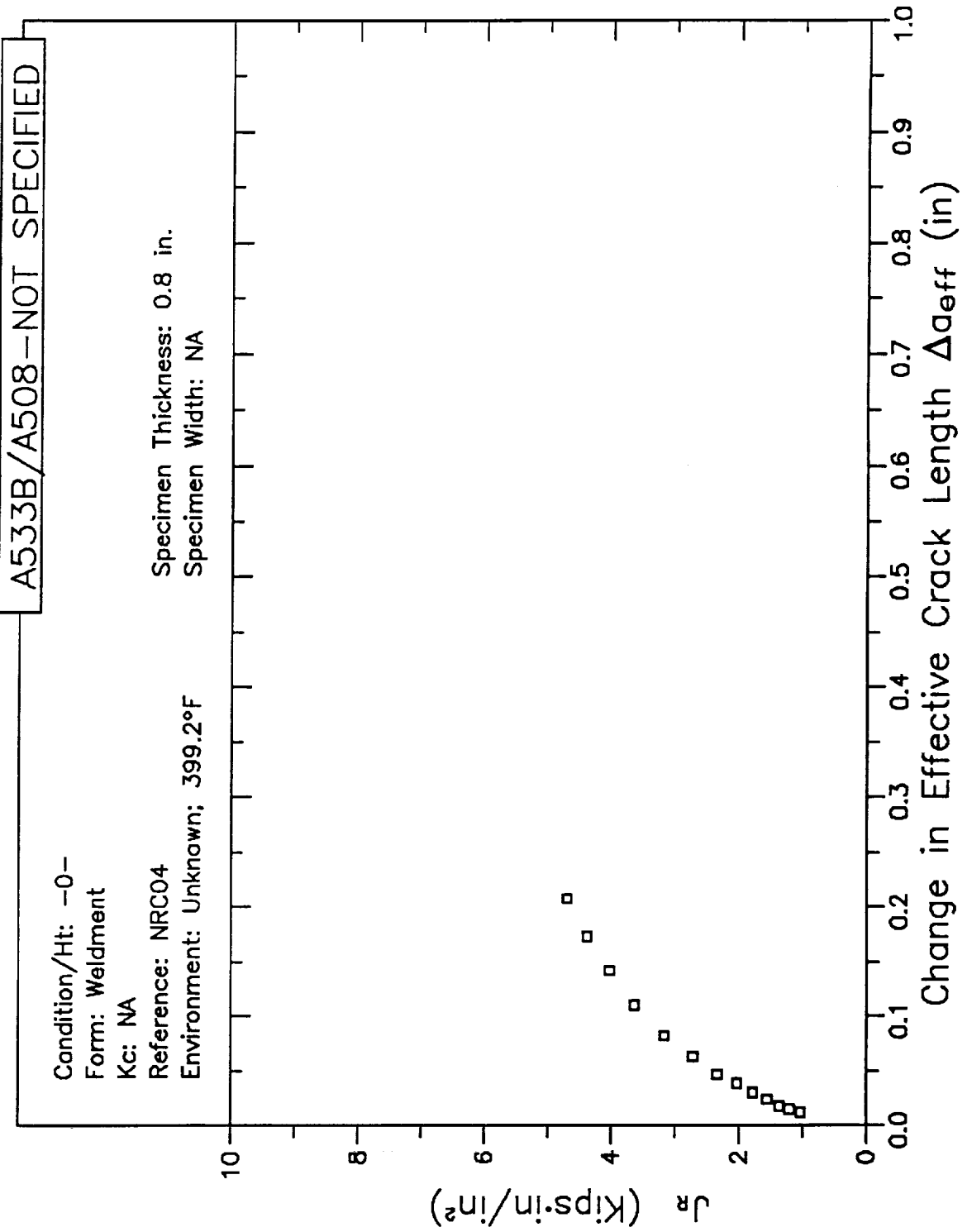
# RESISTANCE CURVE



# RESISTANCE CURVE



# RESISTANCE CURVE

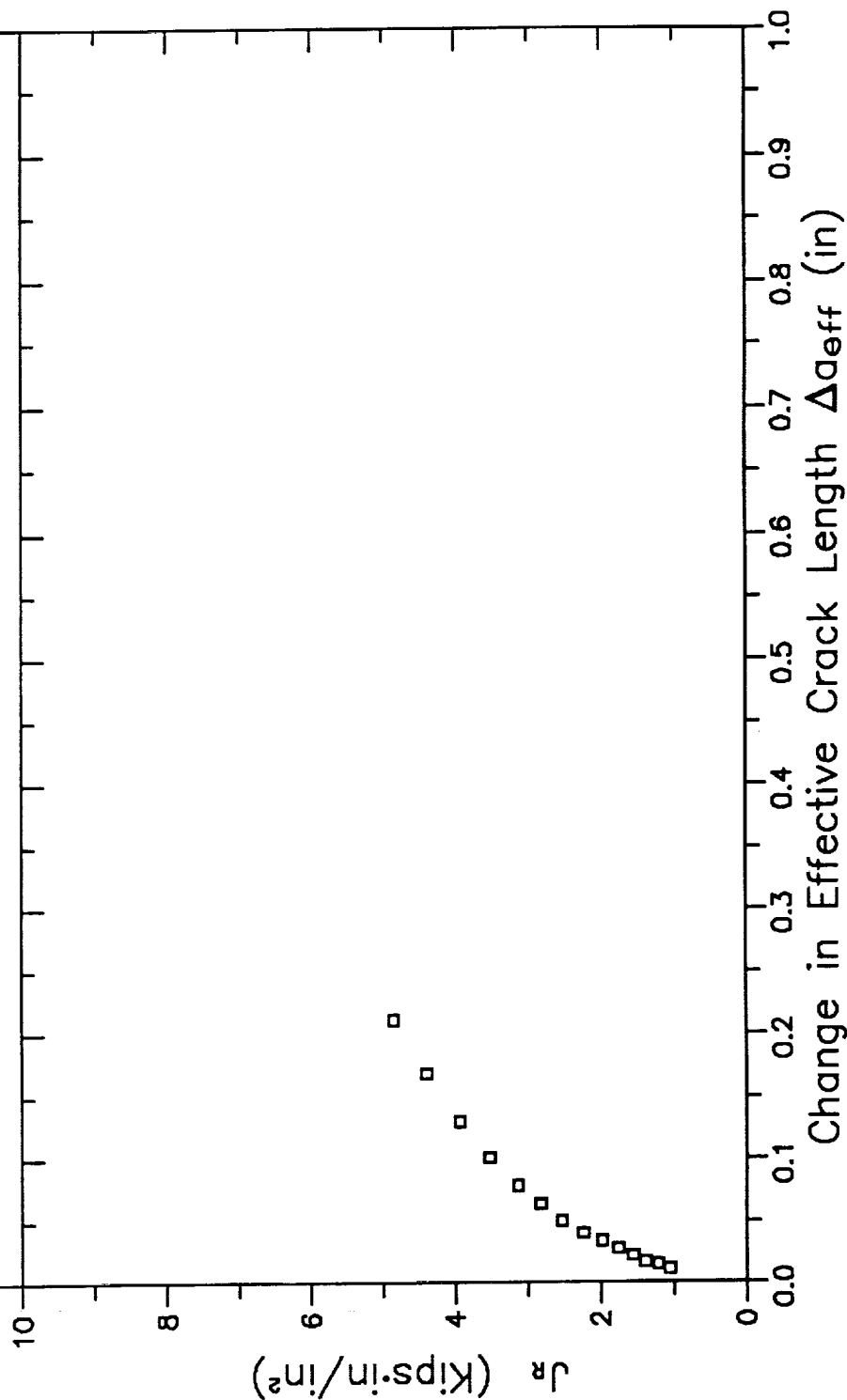


# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 399.2°F

Specimen Thickness: 0.8 in.  
Specimen Width: NA



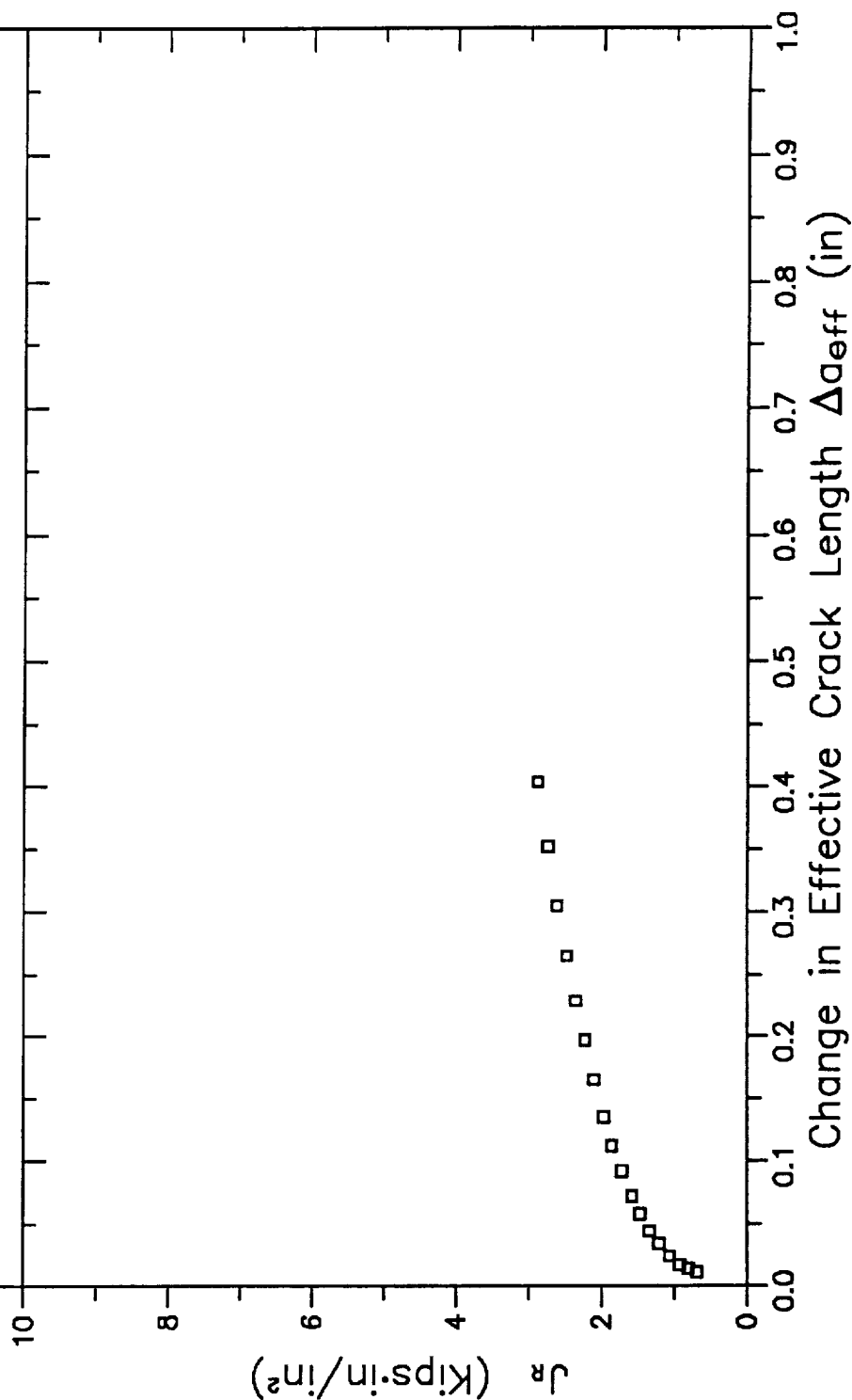
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# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 399.2°F

Specimen Thickness: 0.8 in.  
Specimen Width: NA

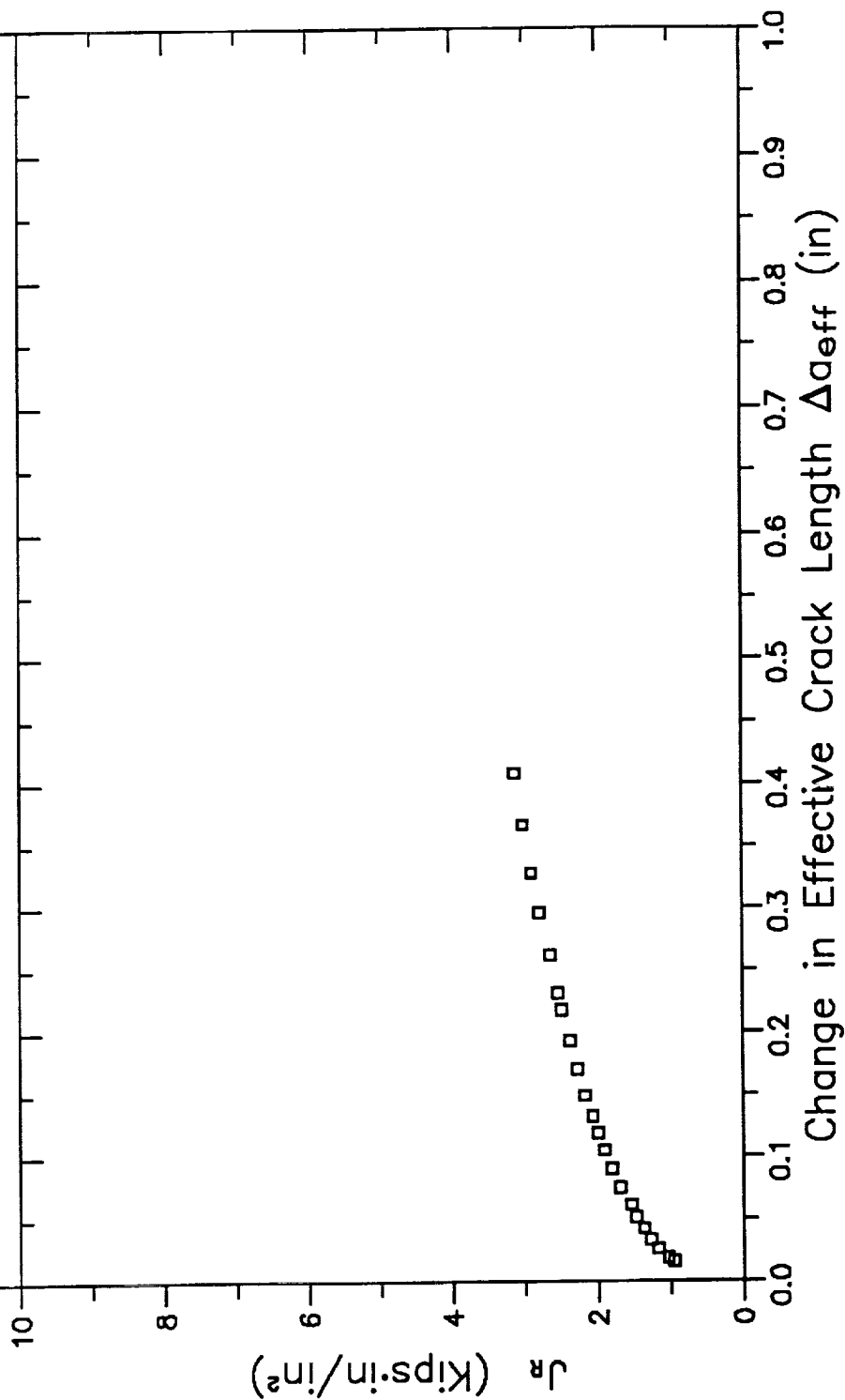


# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

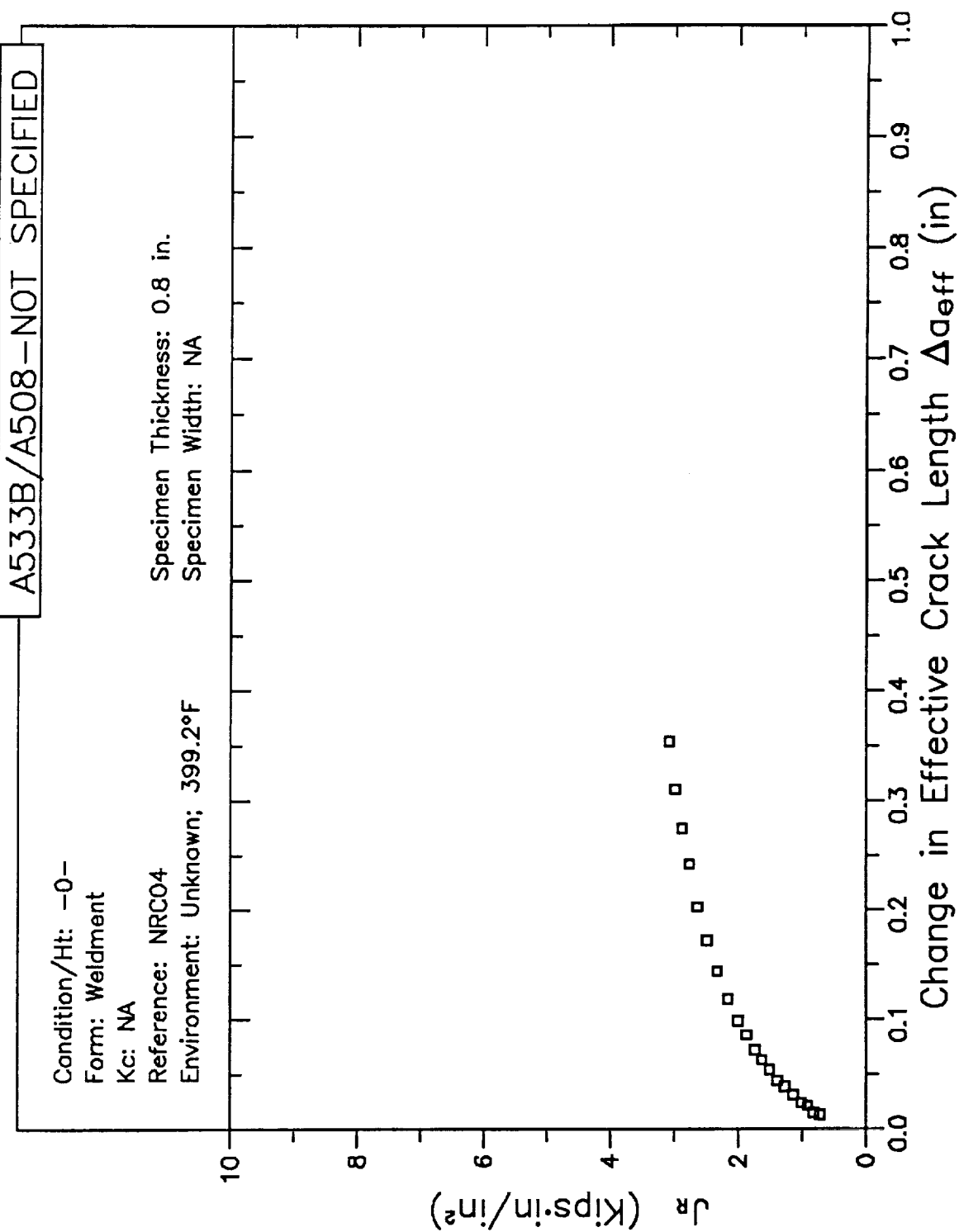
Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 399.2°F

Specimen Thickness: 0.8 in.  
Specimen Width: NA





# RESISTANCE CURVE



# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

Condition/Ht: -0-

Form: Weldment

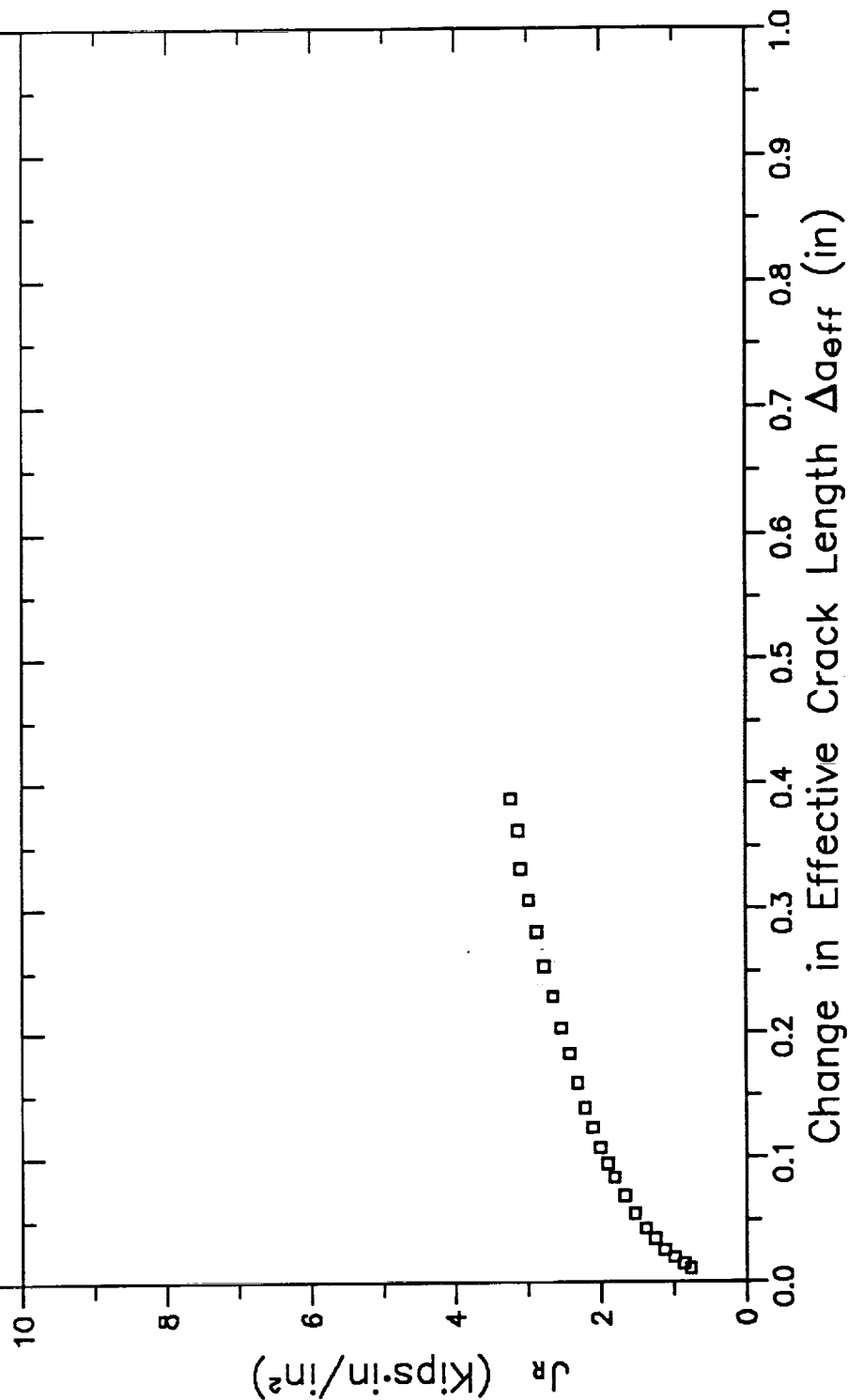
Kc: NA

Reference: NRC04

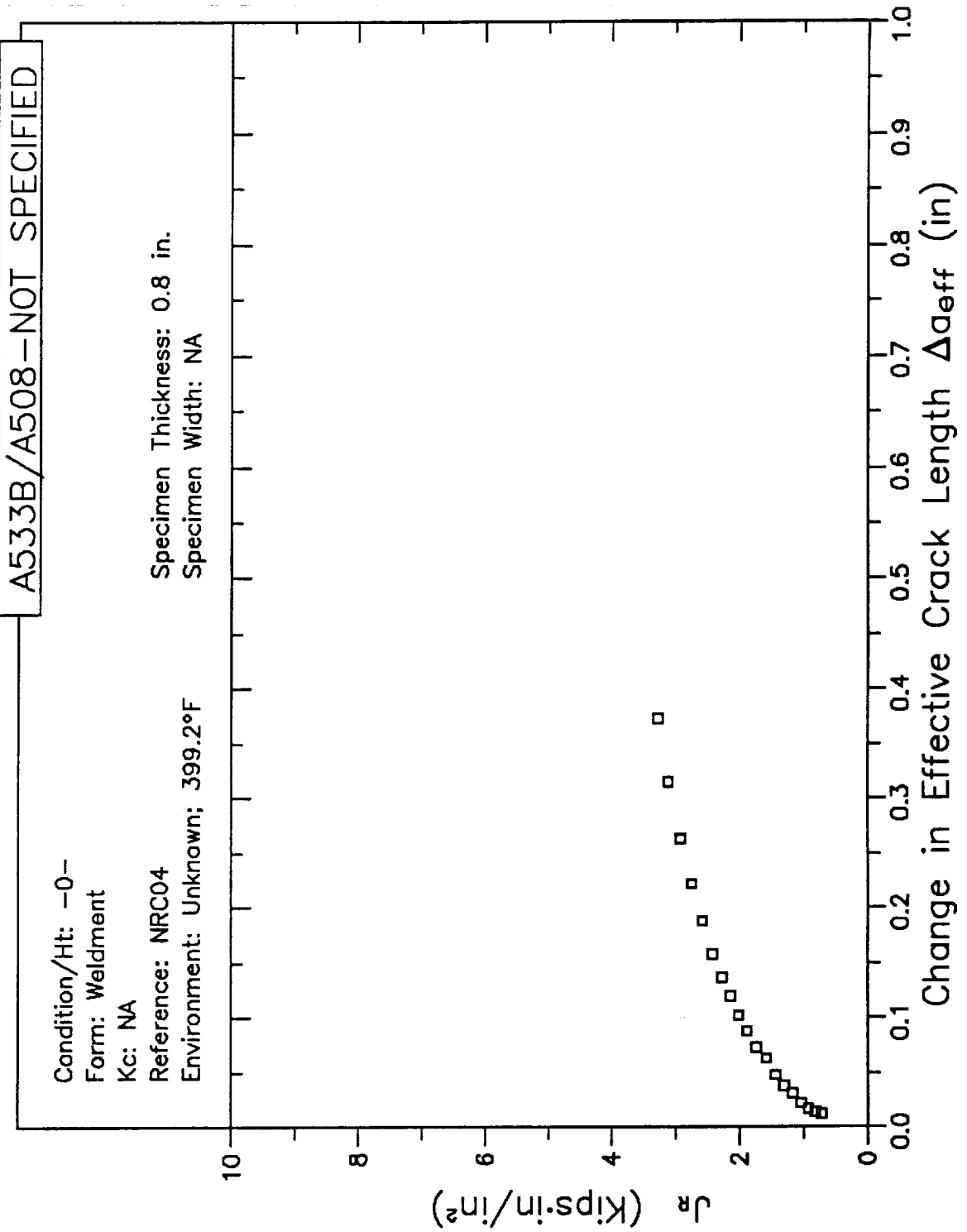
Environment: Unknown; 399.2°F

Specimen Thickness: 0.8 in.

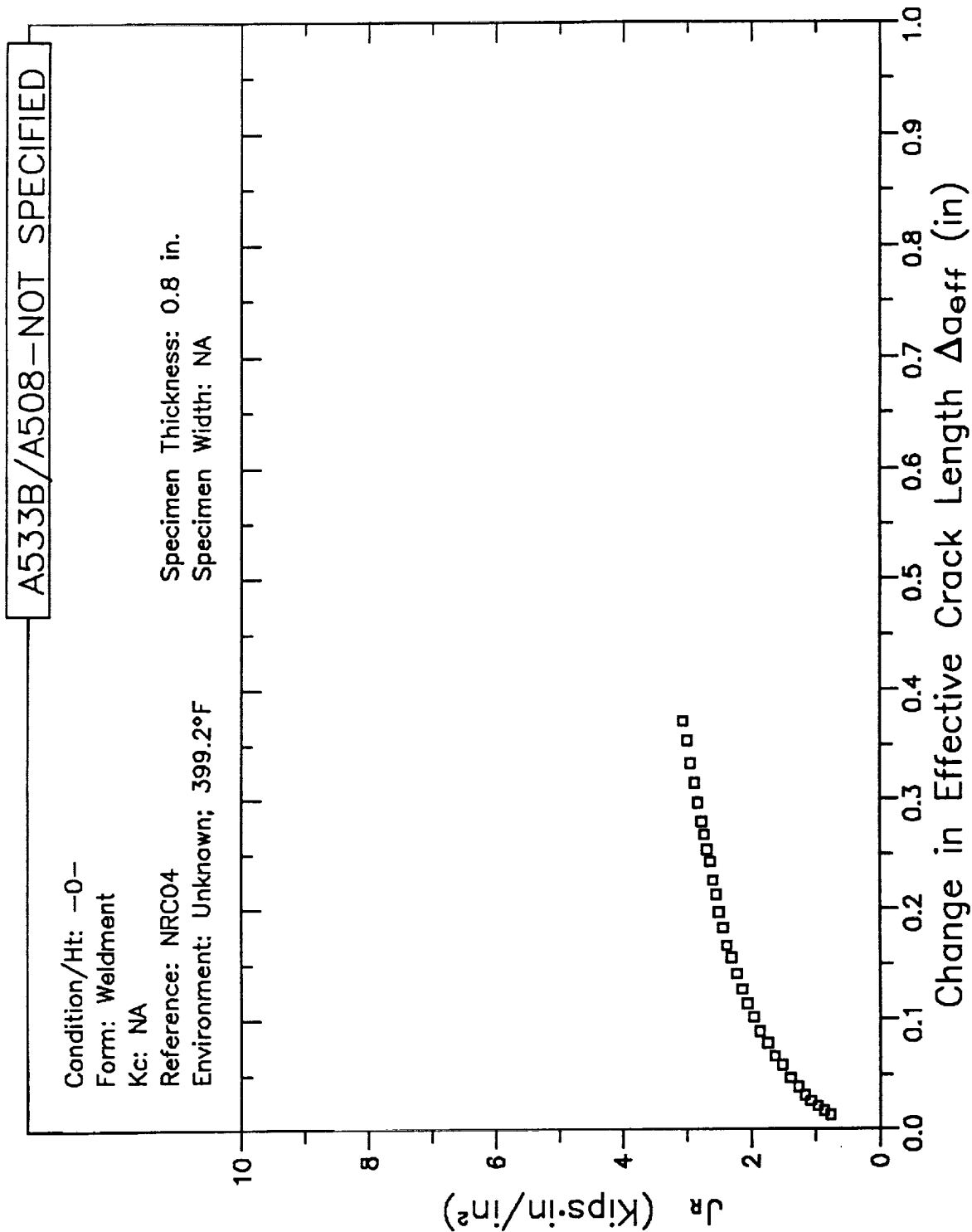
Specimen Width: NA



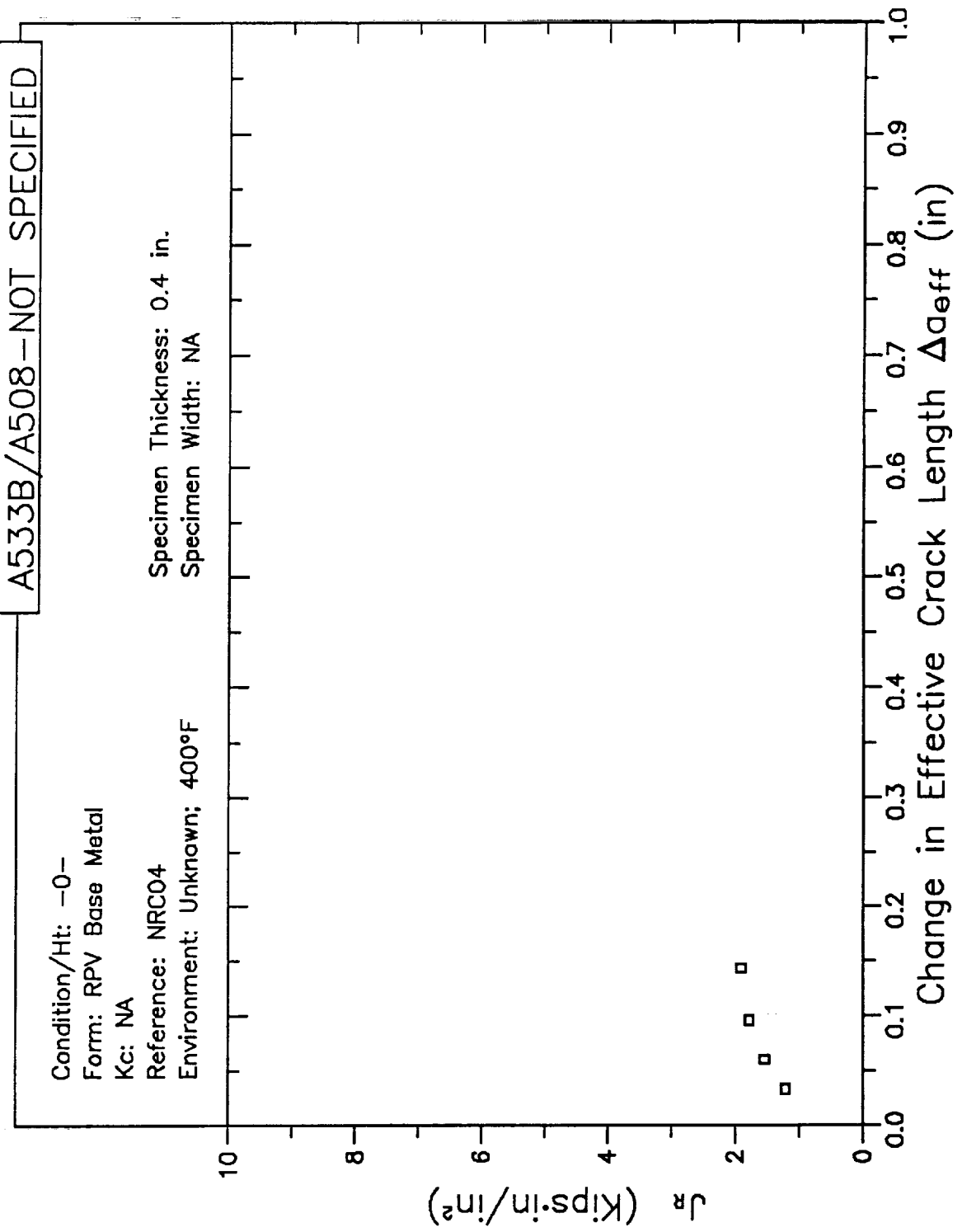
# RESISTANCE CURVE



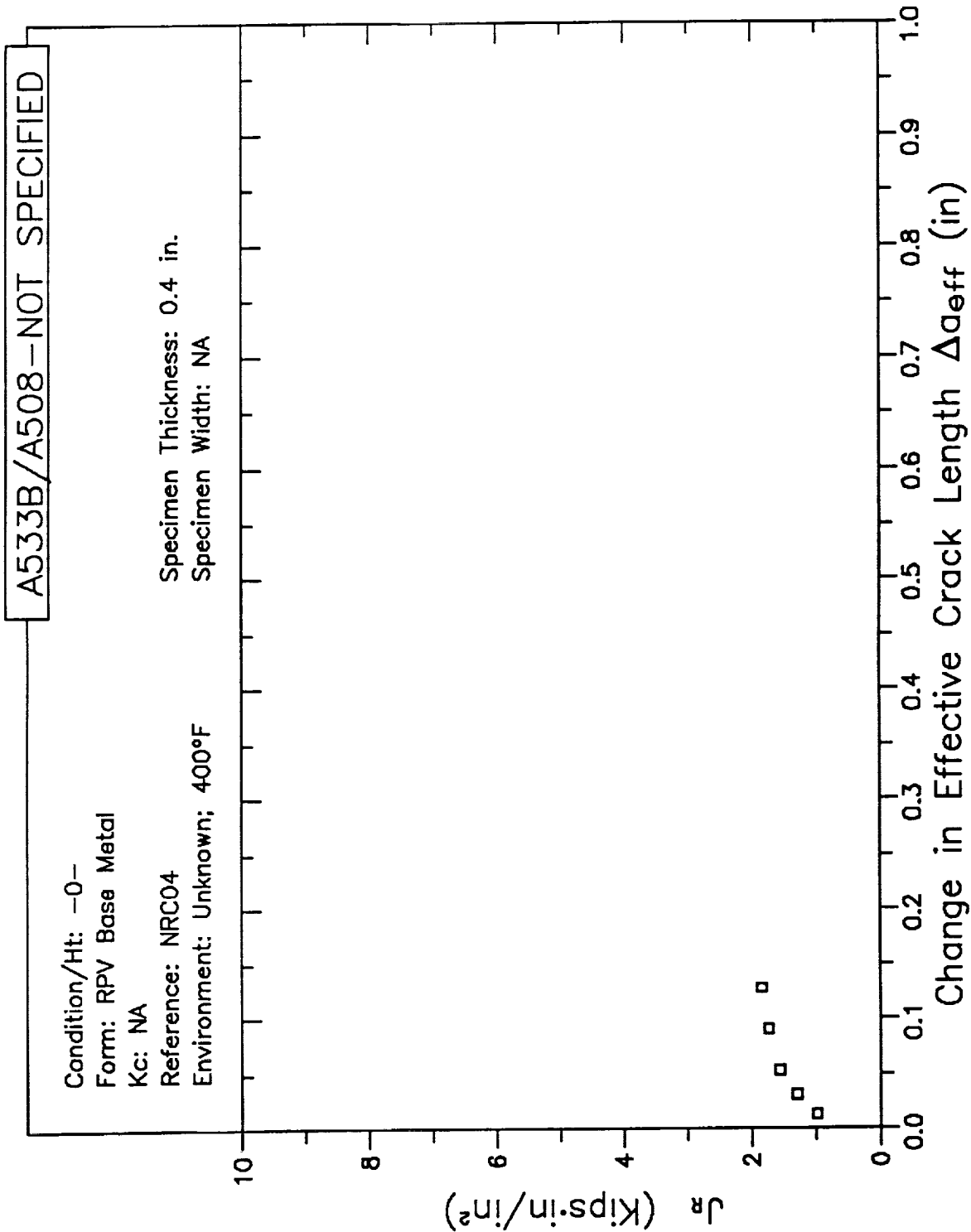
# RESISTANCE CURVE



# RESISTANCE CURVE

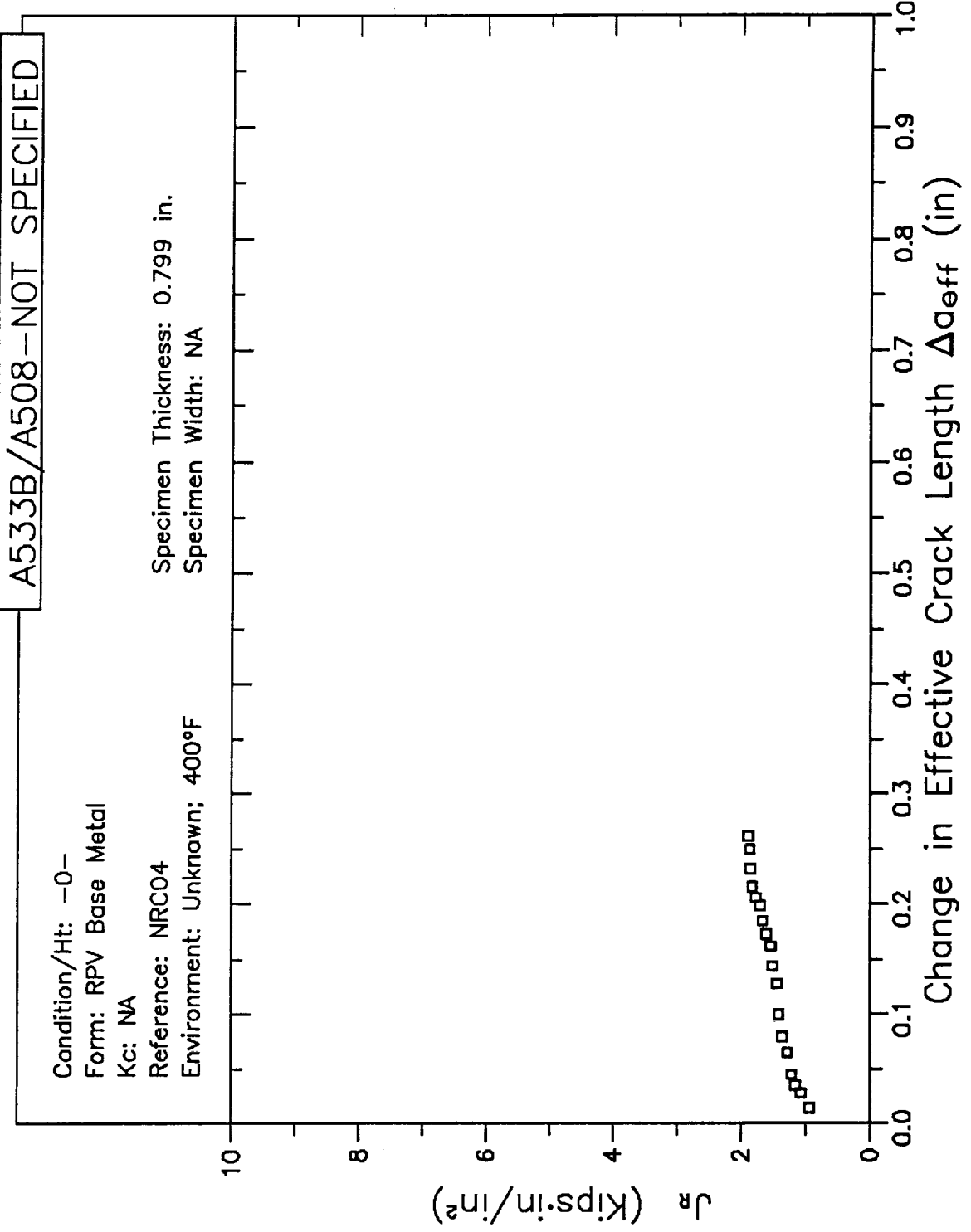


# RESISTANCE CURVE

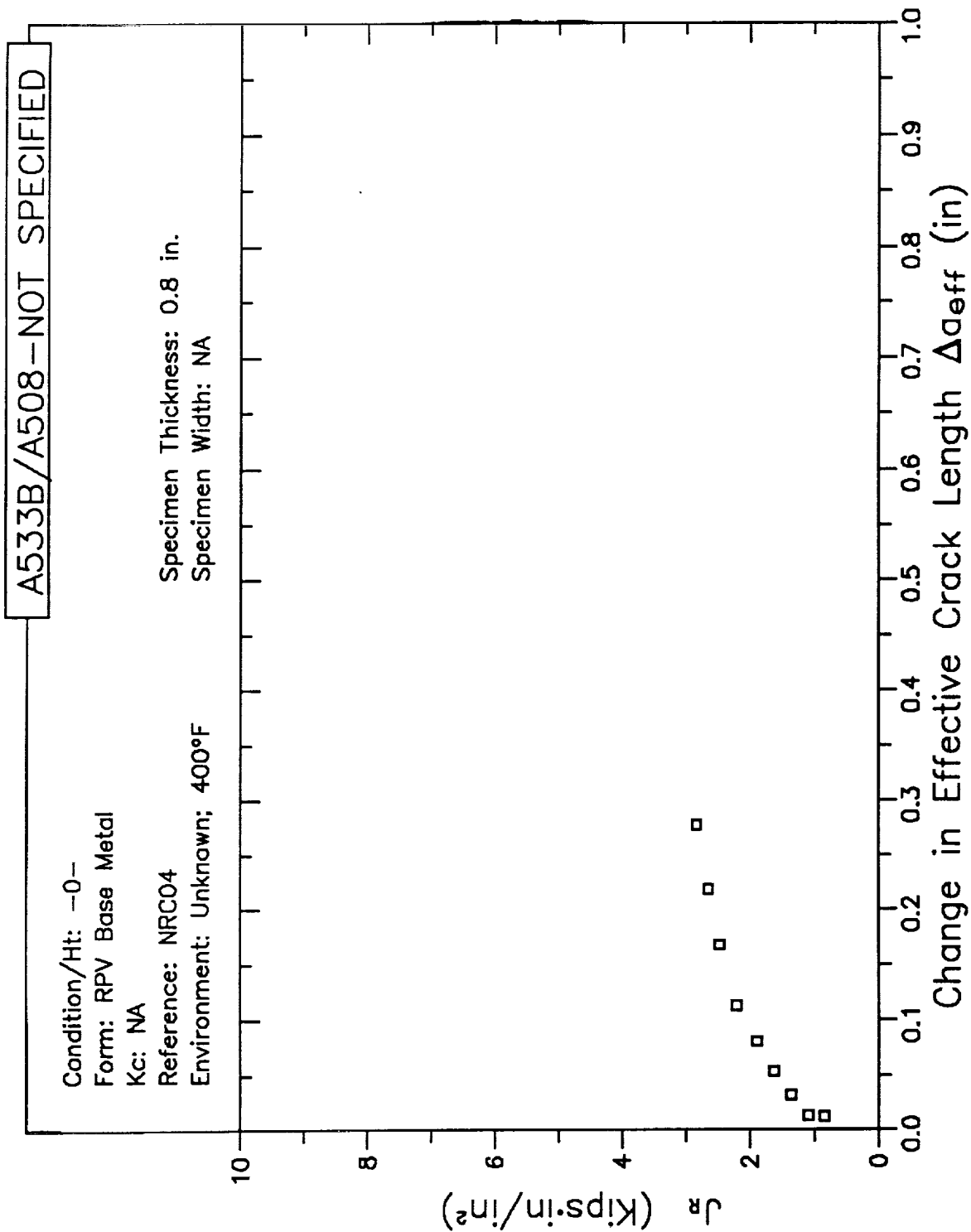


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# RESISTANCE CURVE

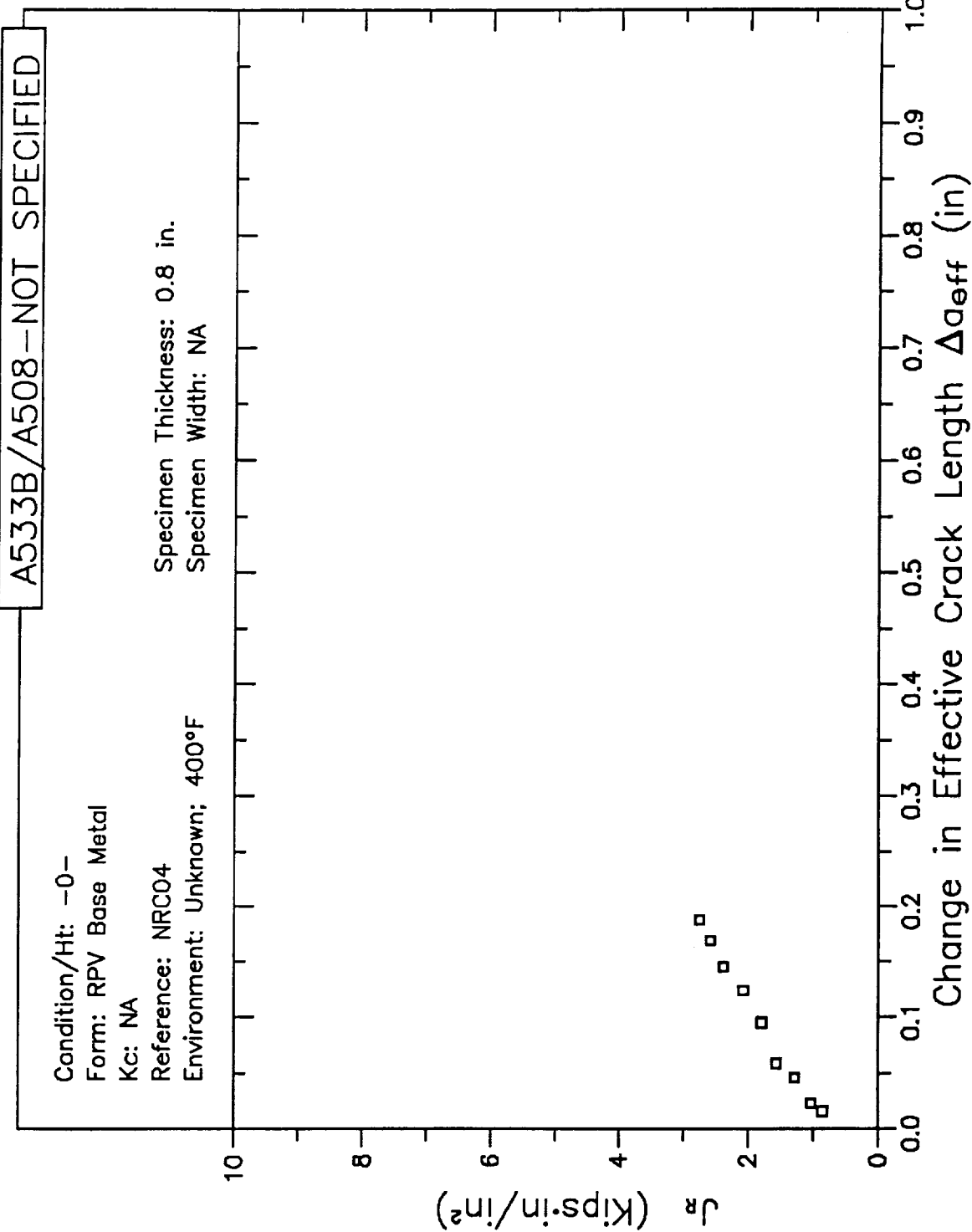


# RESISTANCE CURVE





# RESISTANCE CURVE

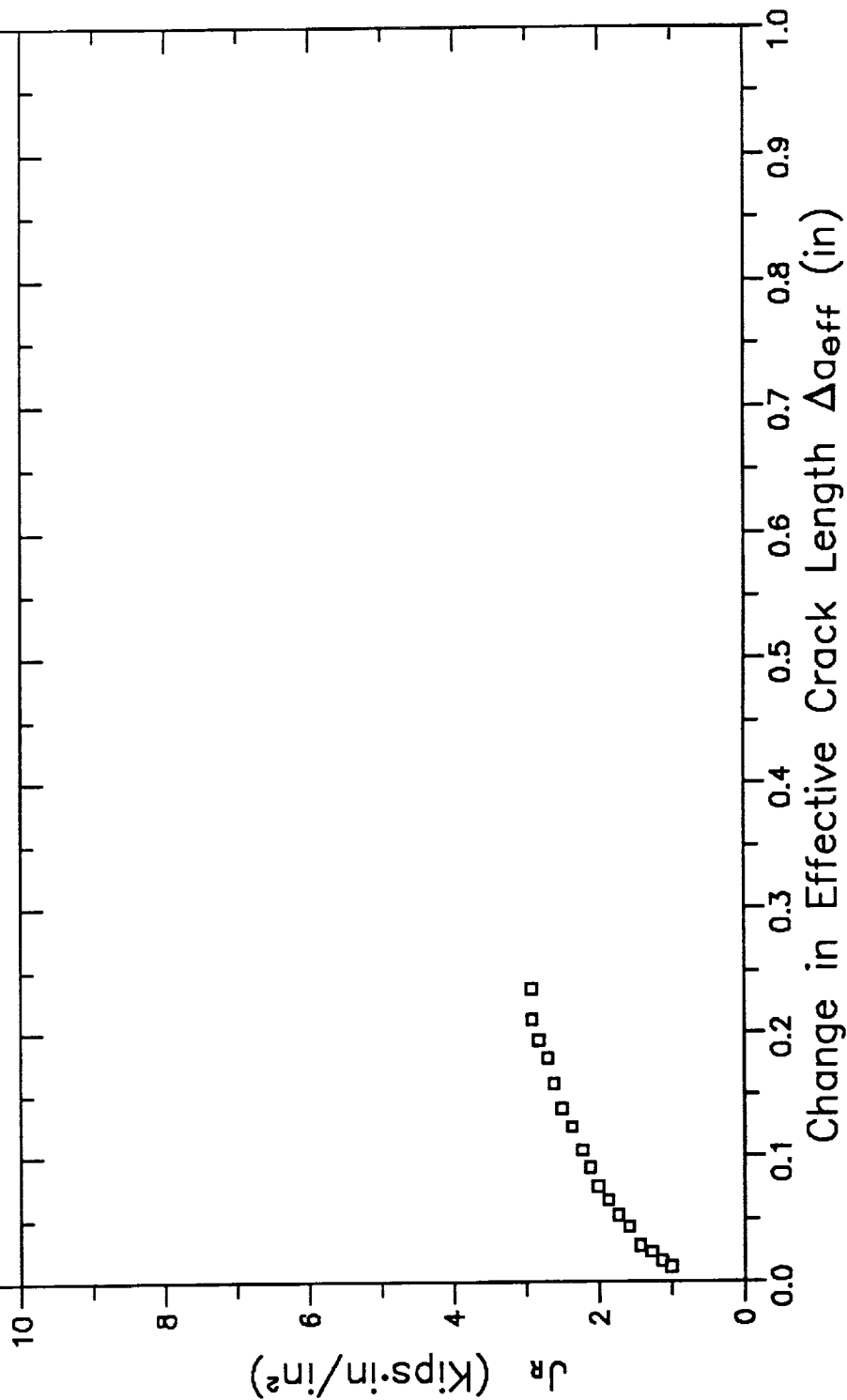


# RESISTANCE CURVE

A533B/A508 - NOT SPECIFIED

Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 400°F

Specimen Thickness: 0.801 in.  
Specimen Width: NA



# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

Condition/Ht: -0-

Form: RPV Base Metal

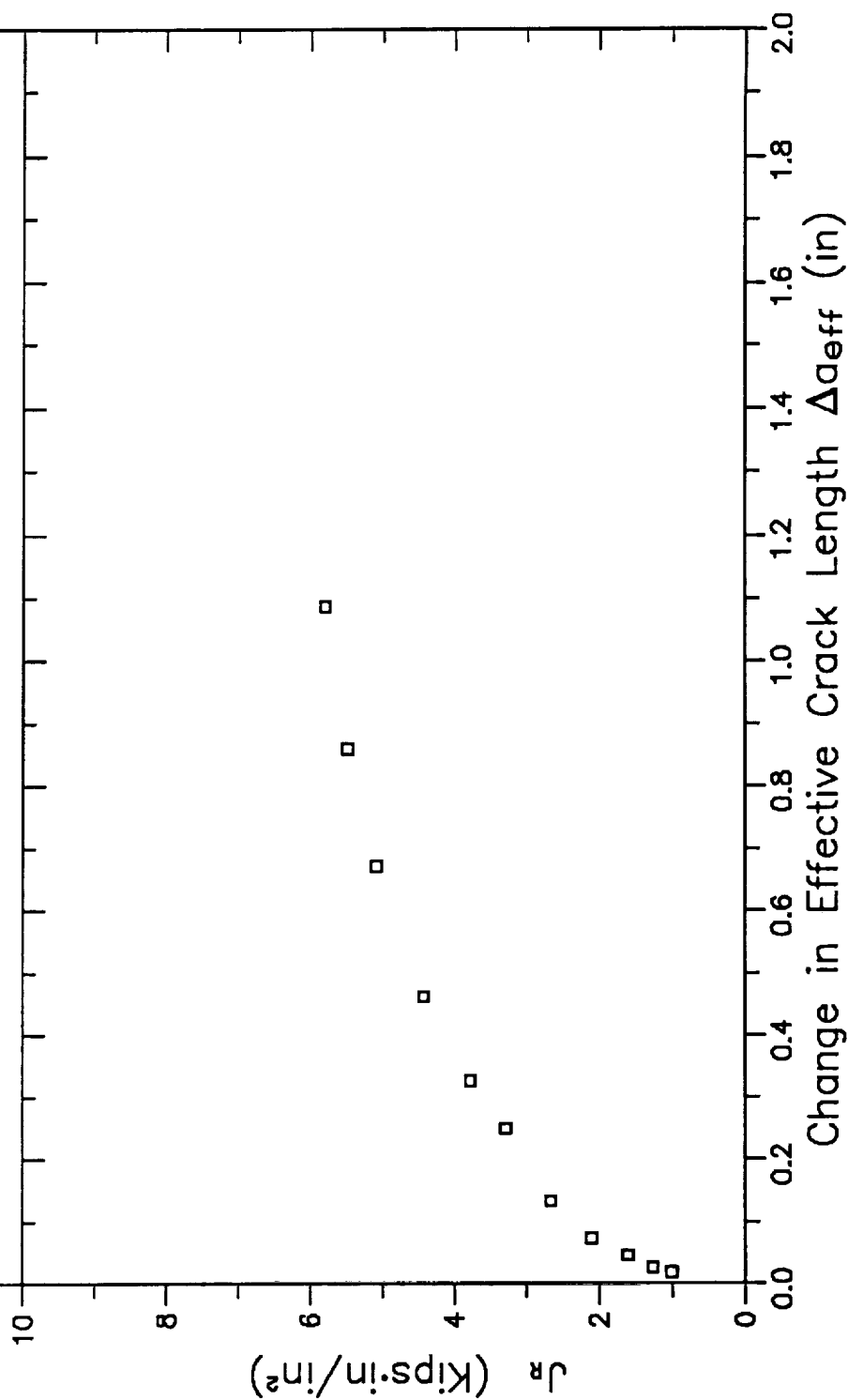
Kc: NA

Reference: NRC04

Environment: Unknown; 400°F

Specimen Thickness: 3.2 in.

Specimen Width: NA



# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

Condition/Ht: -0-

Form: RPV Base Metal

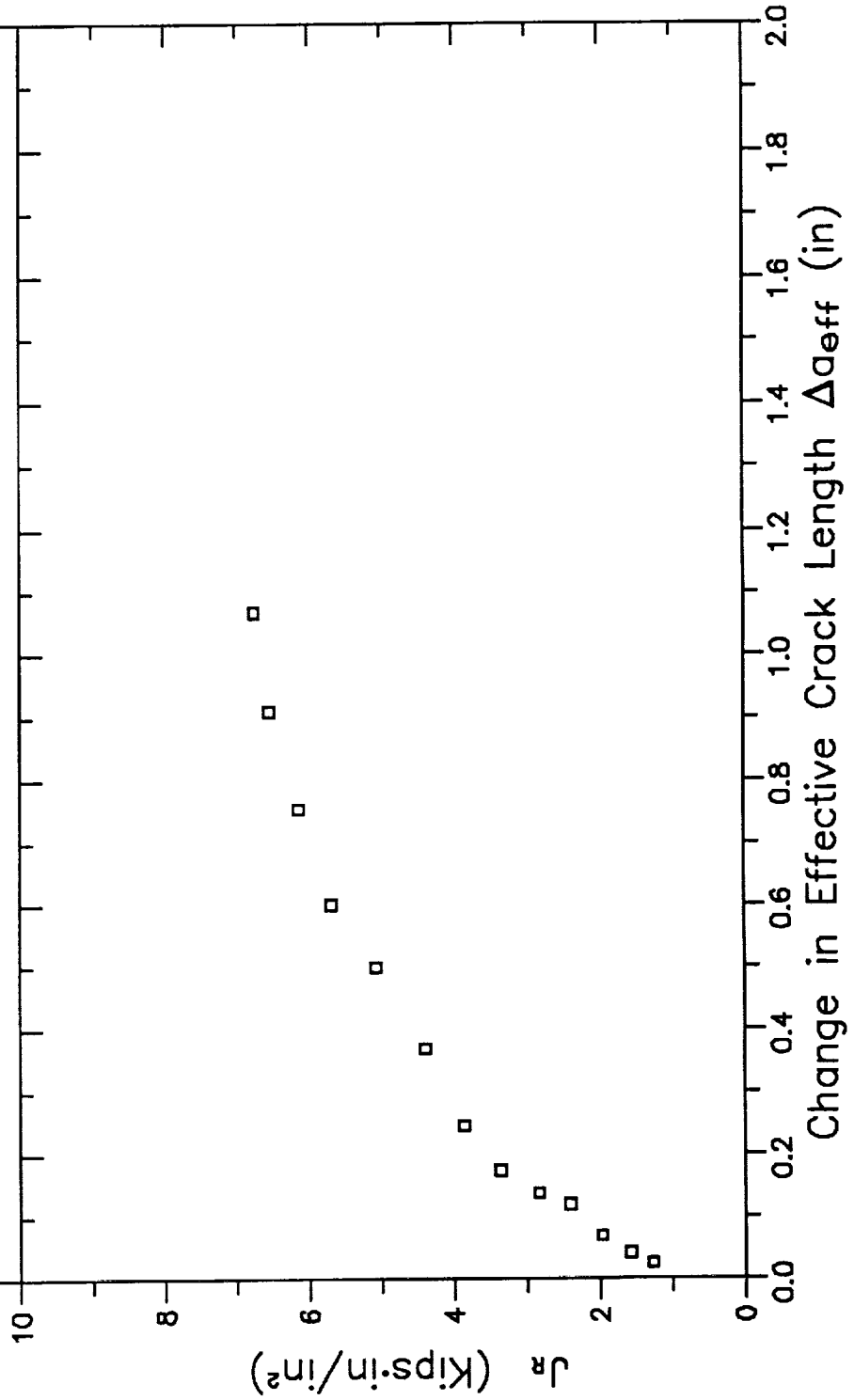
Kc: NA

Reference: NRC04

Environment: Unknown; 400°F

Specimen Thickness: 3.2 in.

Specimen Width: NA

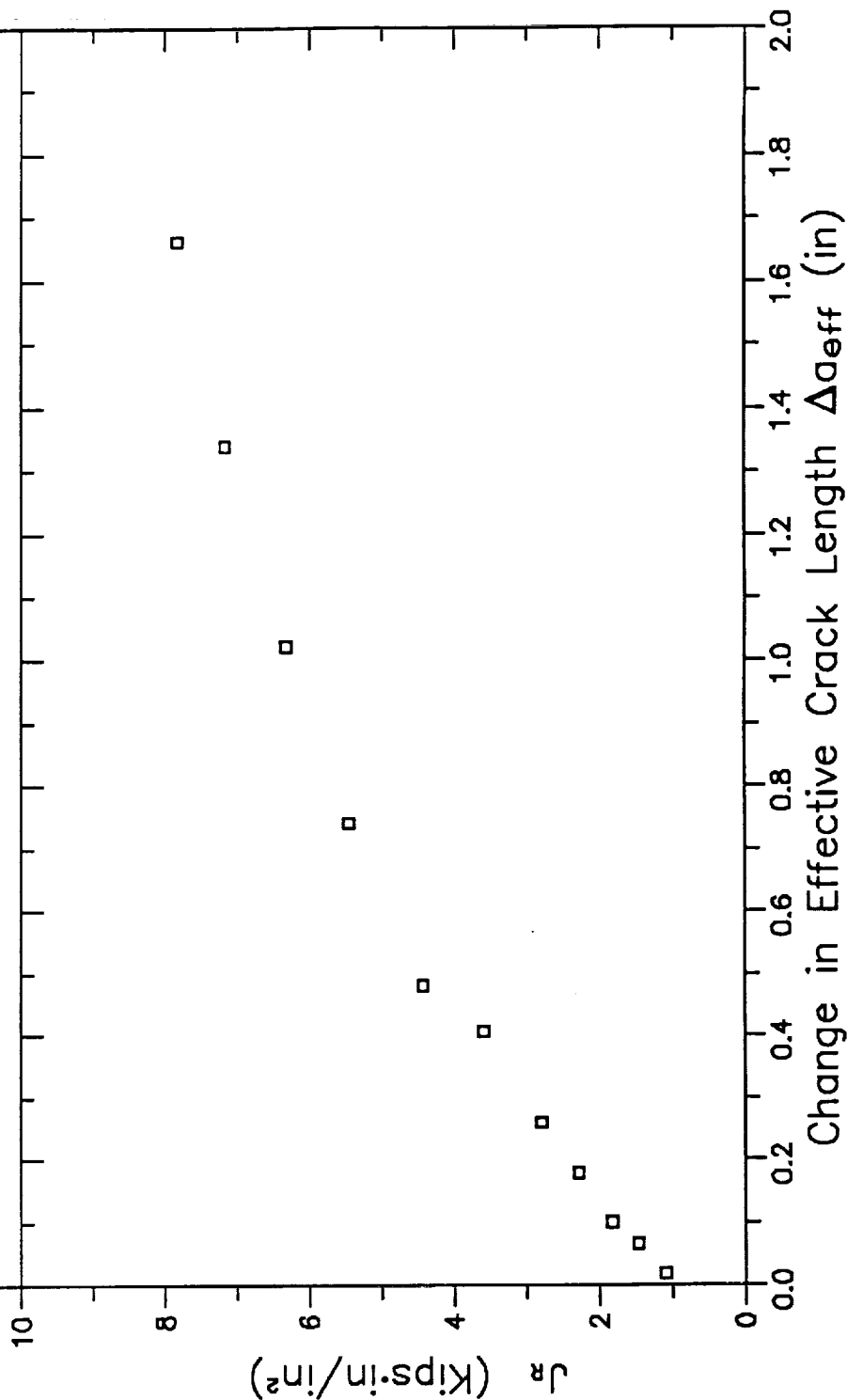


# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 400°F

Specimen Thickness: 8 in.  
Specimen Width: NA

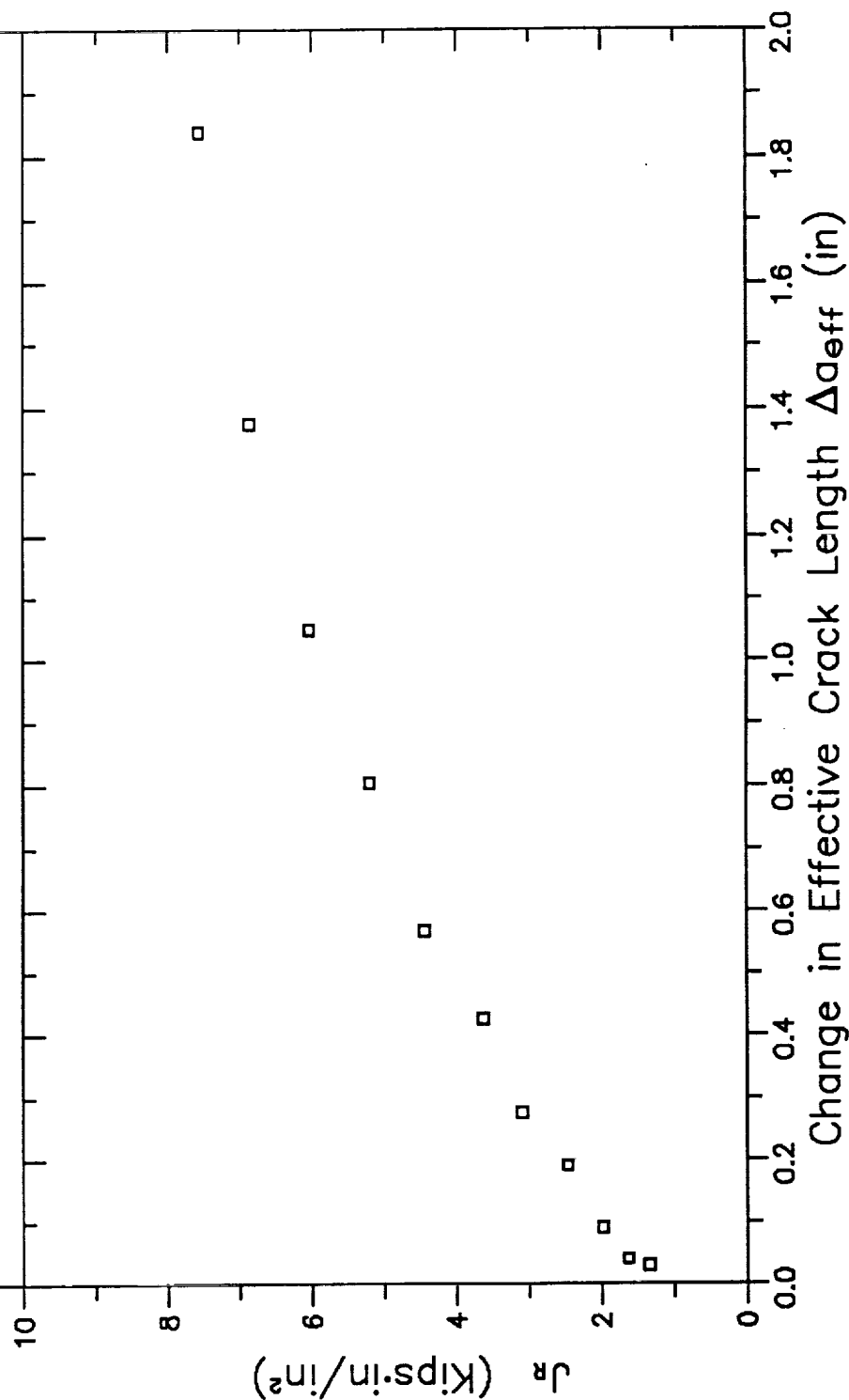


# RESISTANCE CURVE

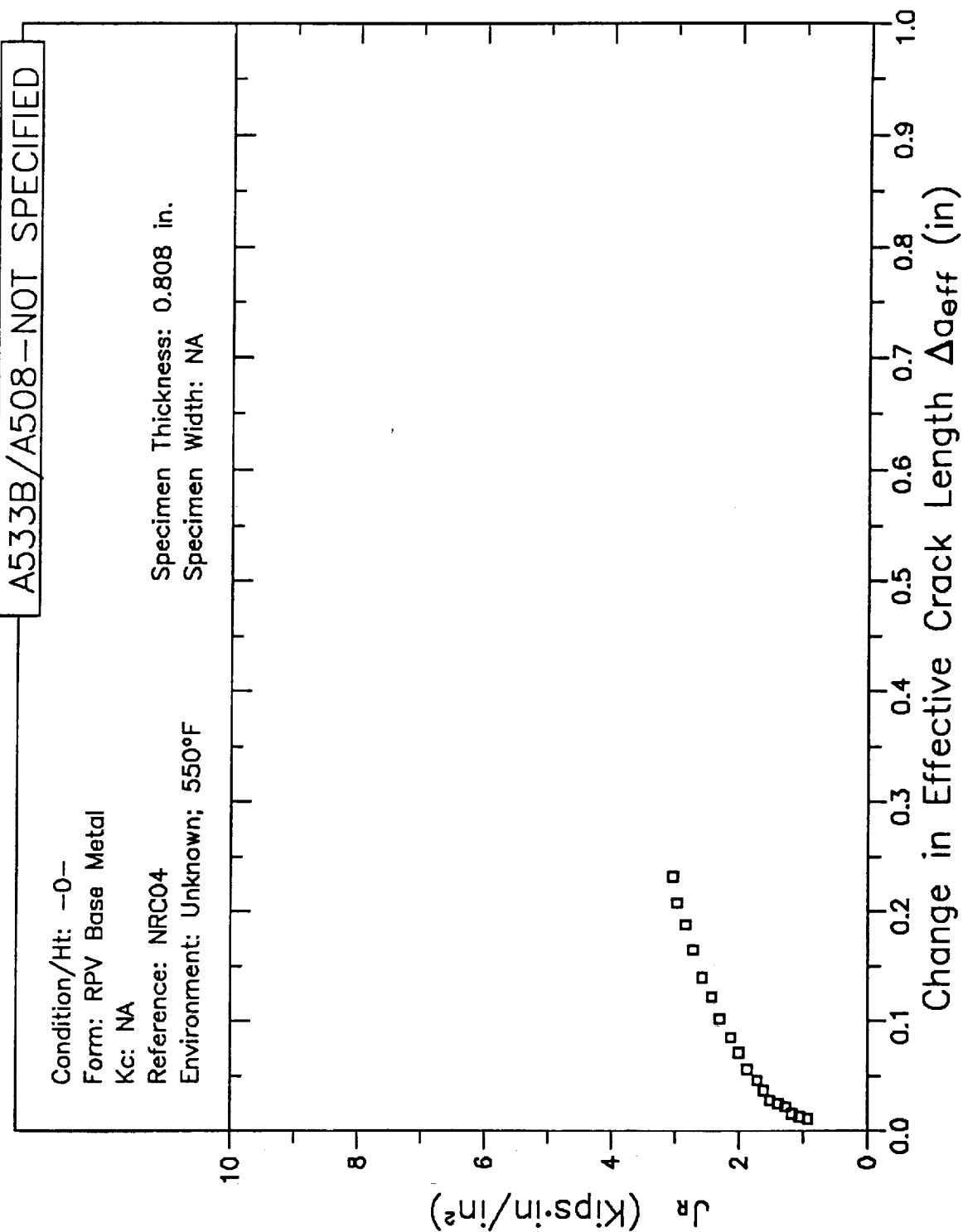
A533B/A508—NOT SPECIFIED

Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 400°F

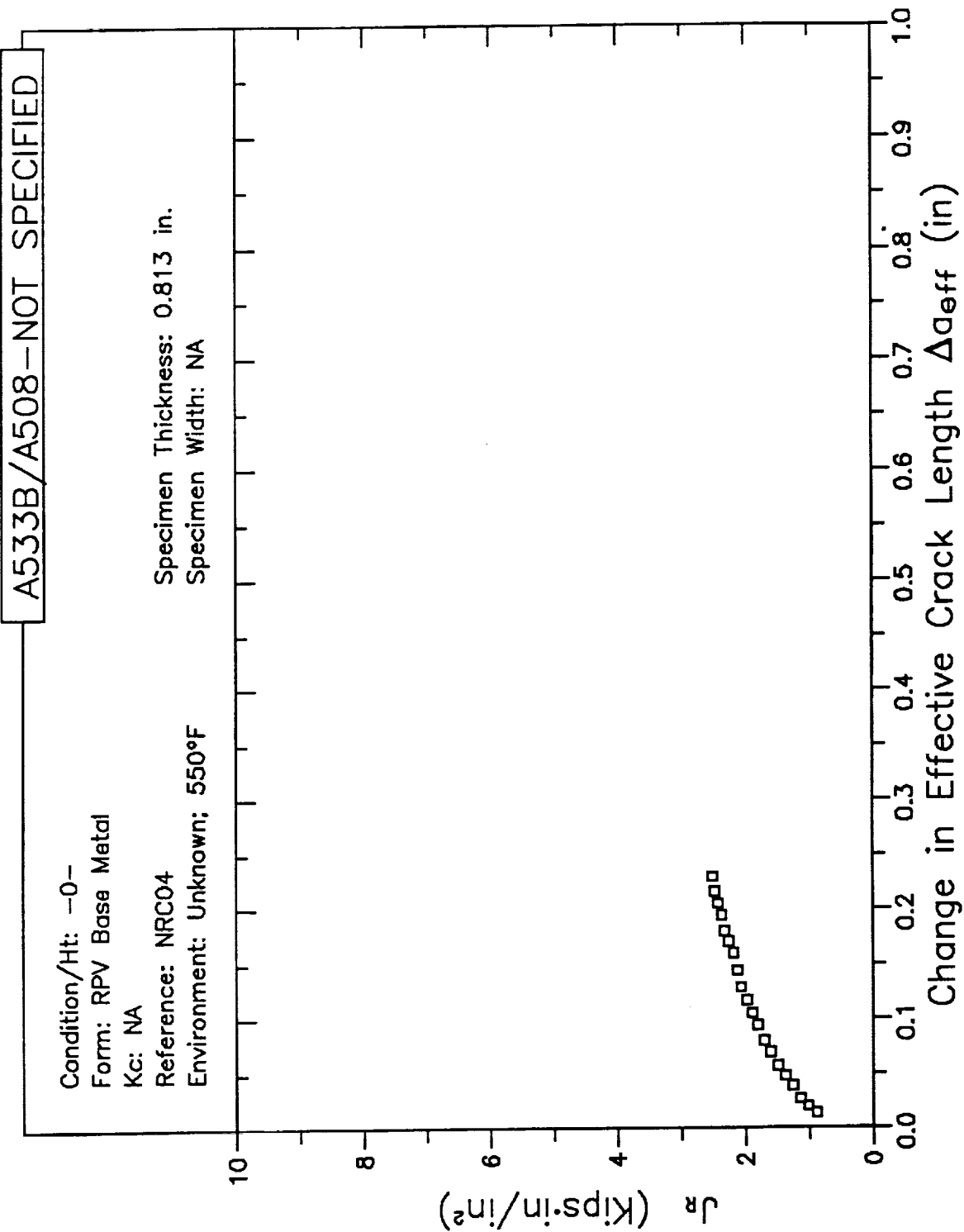
Specimen Thickness: 8 in.  
Specimen Width: NA



# RESISTANCE CURVE



# RESISTANCE CURVE



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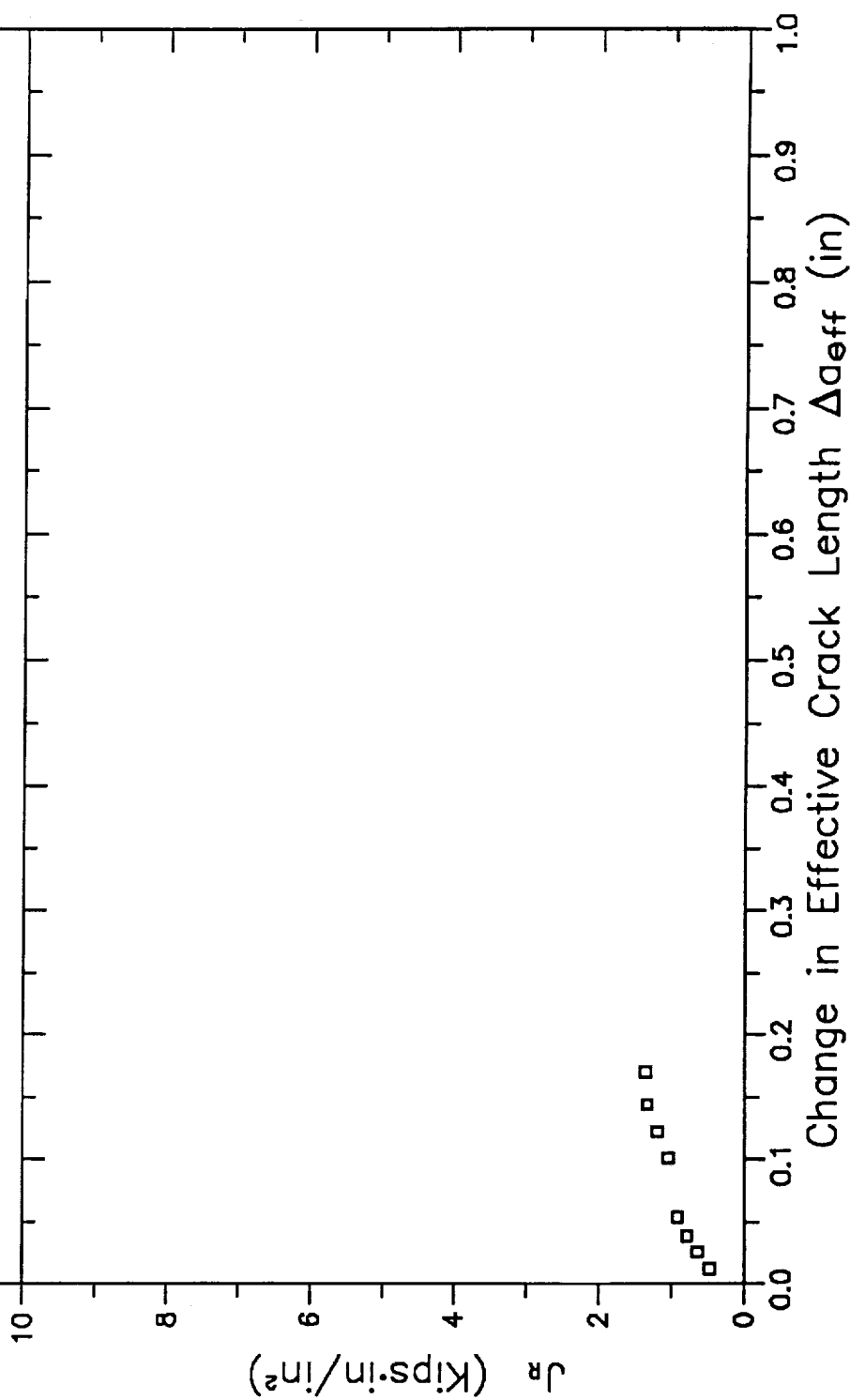


# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA

Reference: NRC04  
Environment: Unknown; 550.4°F  
Specimen Thickness: 0.4 in.  
Specimen Width: NA

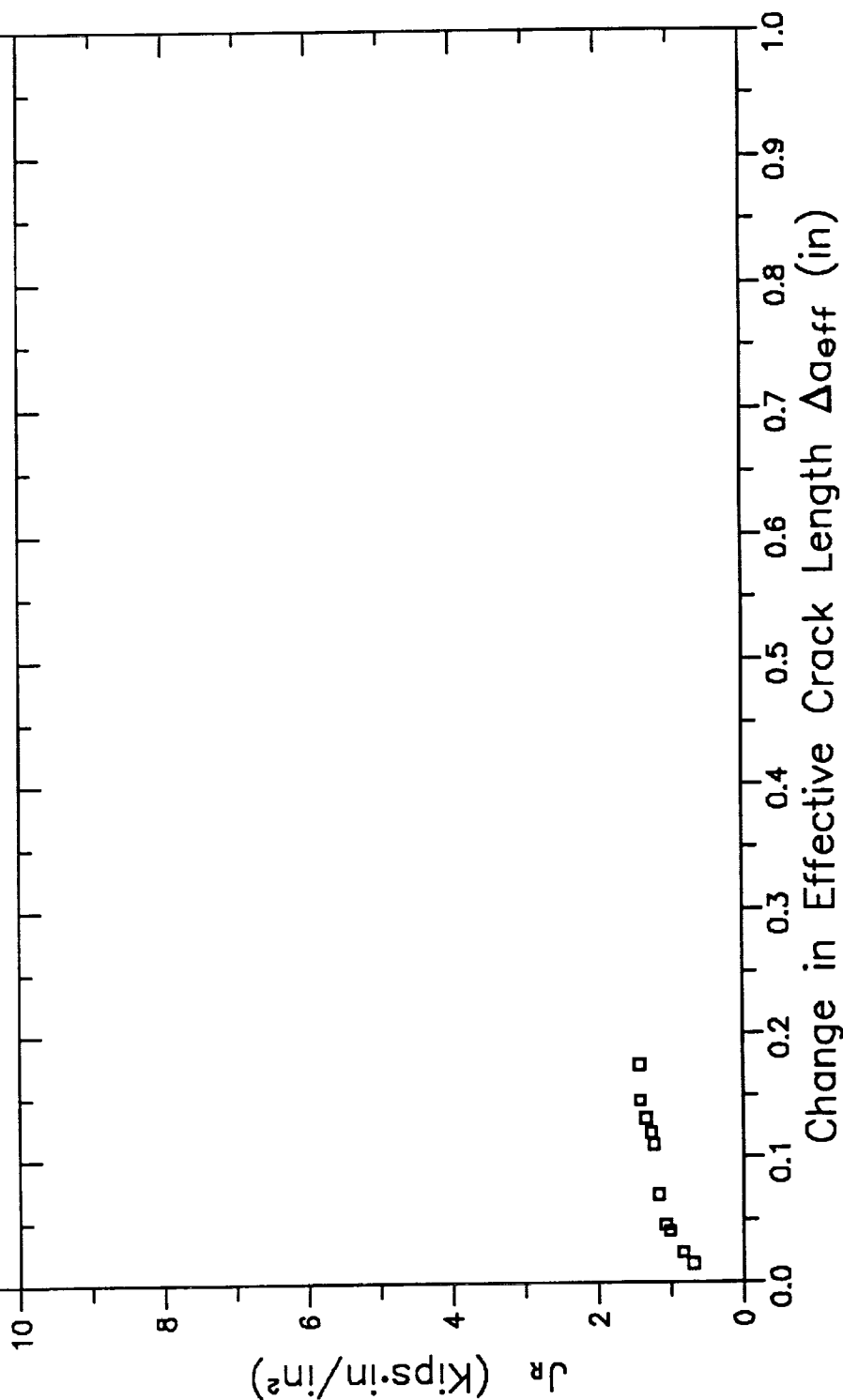


# RESISTANCE CURVE

A533B/A508 - NOT SPECIFIED

Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 550.4°F

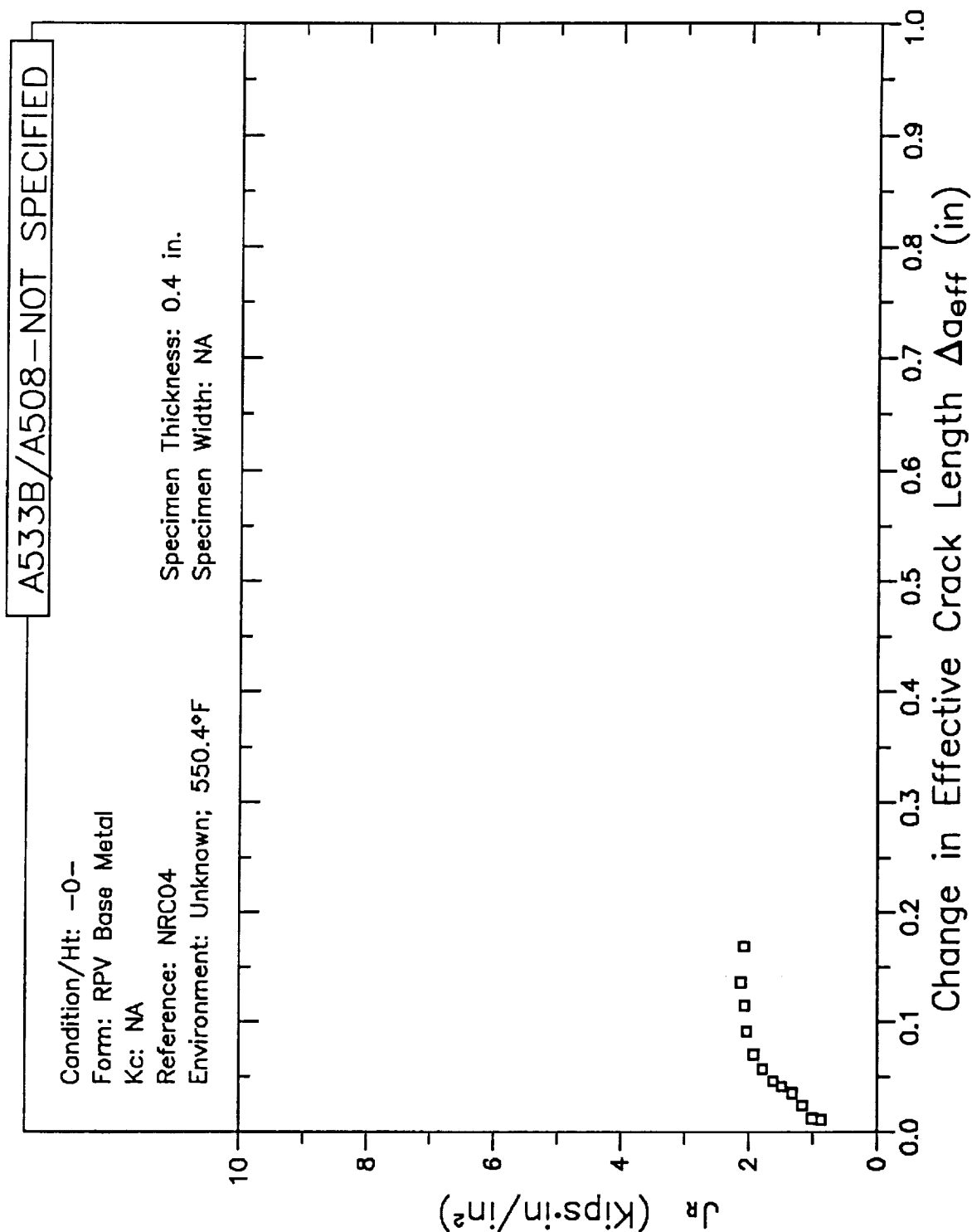
Specimen Thickness: 0.4 in.  
Specimen Width: NA



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# RESISTANCE CURVE

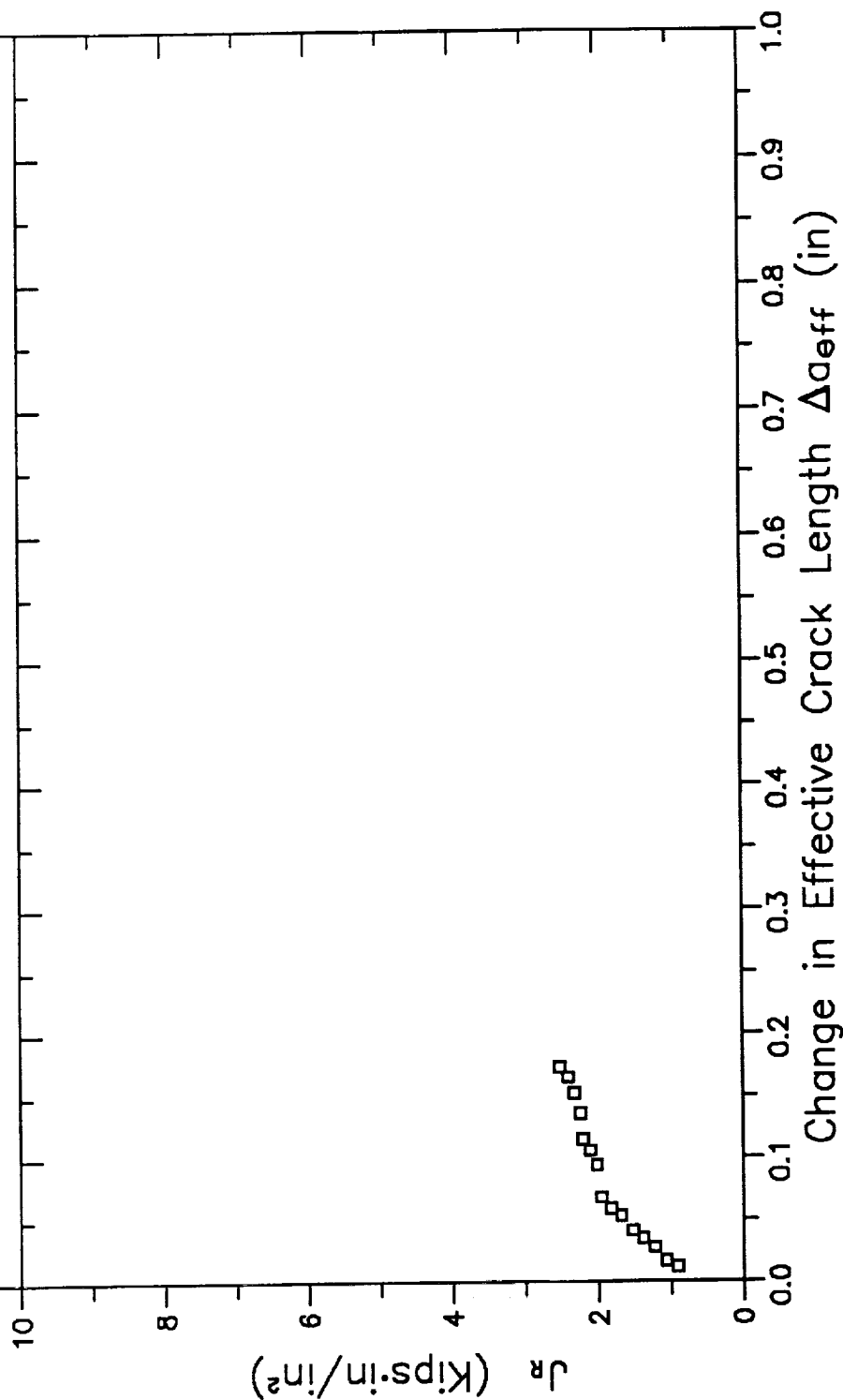


# RESISTANCE CURVE

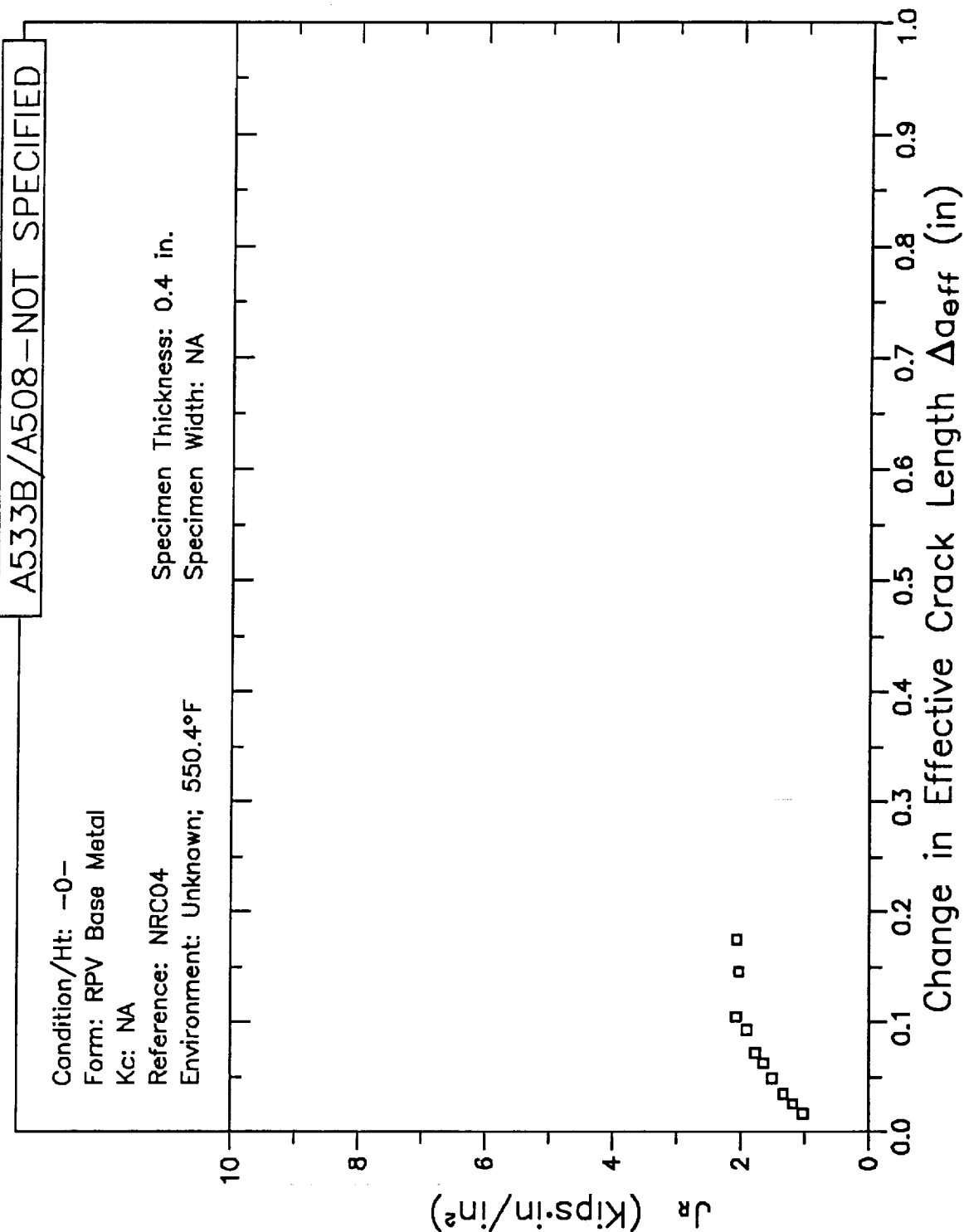
A533B/A508—NOT SPECIFIED

Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 550.4°F

Specimen Thickness: 0.4 in.  
Specimen Width: NA



# RESISTANCE CURVE

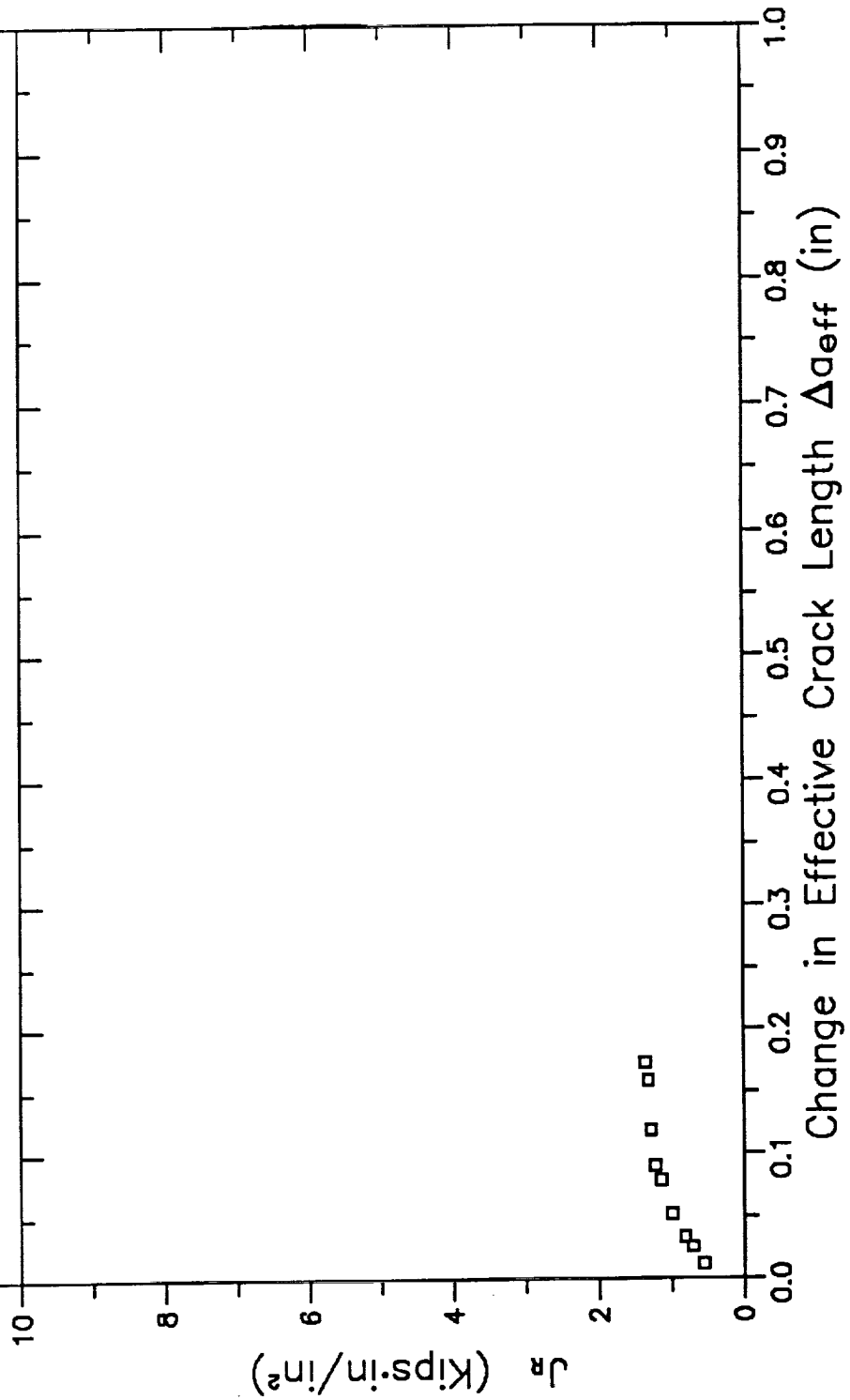


# RESISTANCE CURVE

A533B/A508 - NOT SPECIFIED

Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 550.4°F

Specimen Thickness: 0.4 in.  
Specimen Width: NA



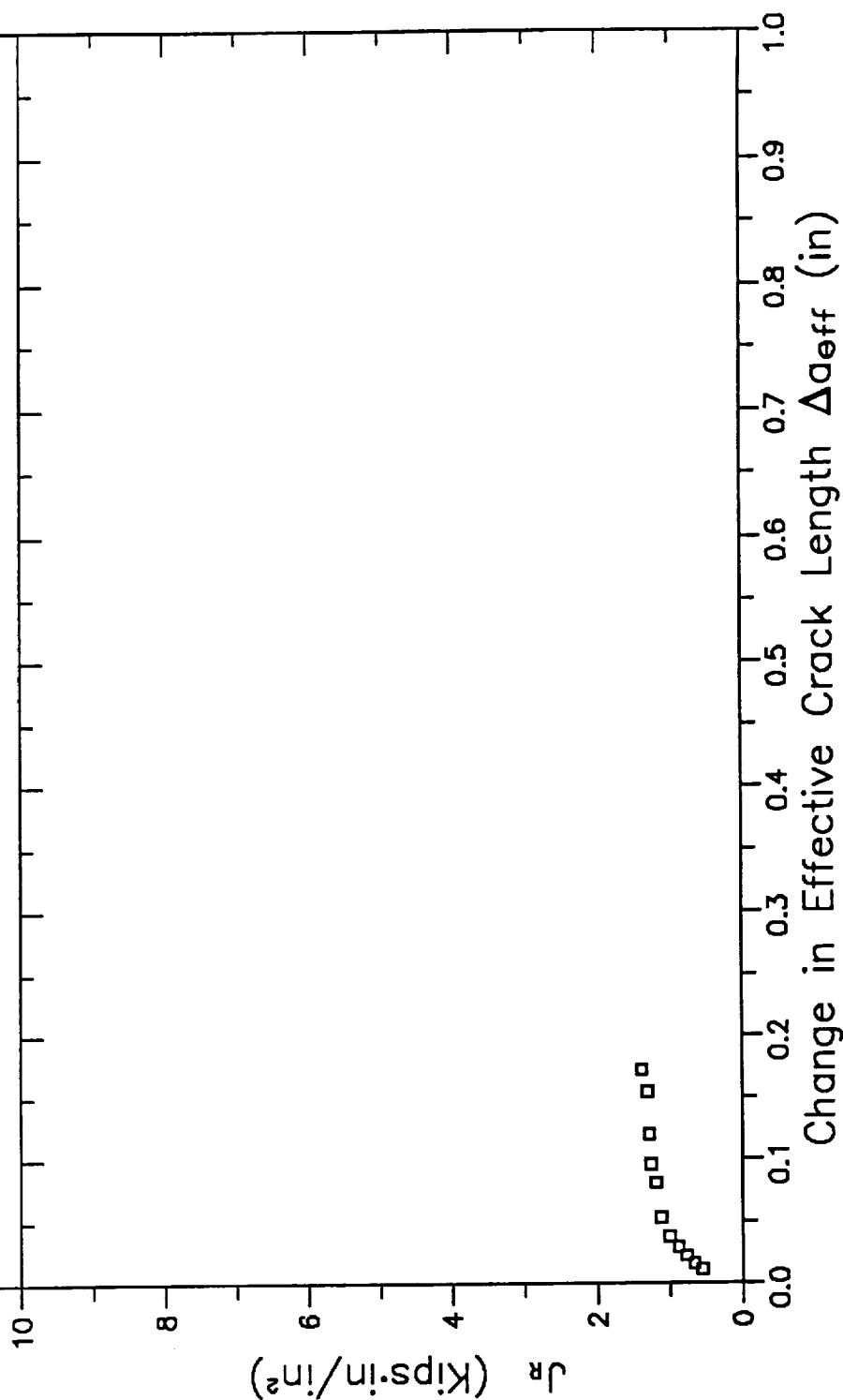
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# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 550.4°F

Specimen Thickness: 0.4 in.  
Specimen Width: NA

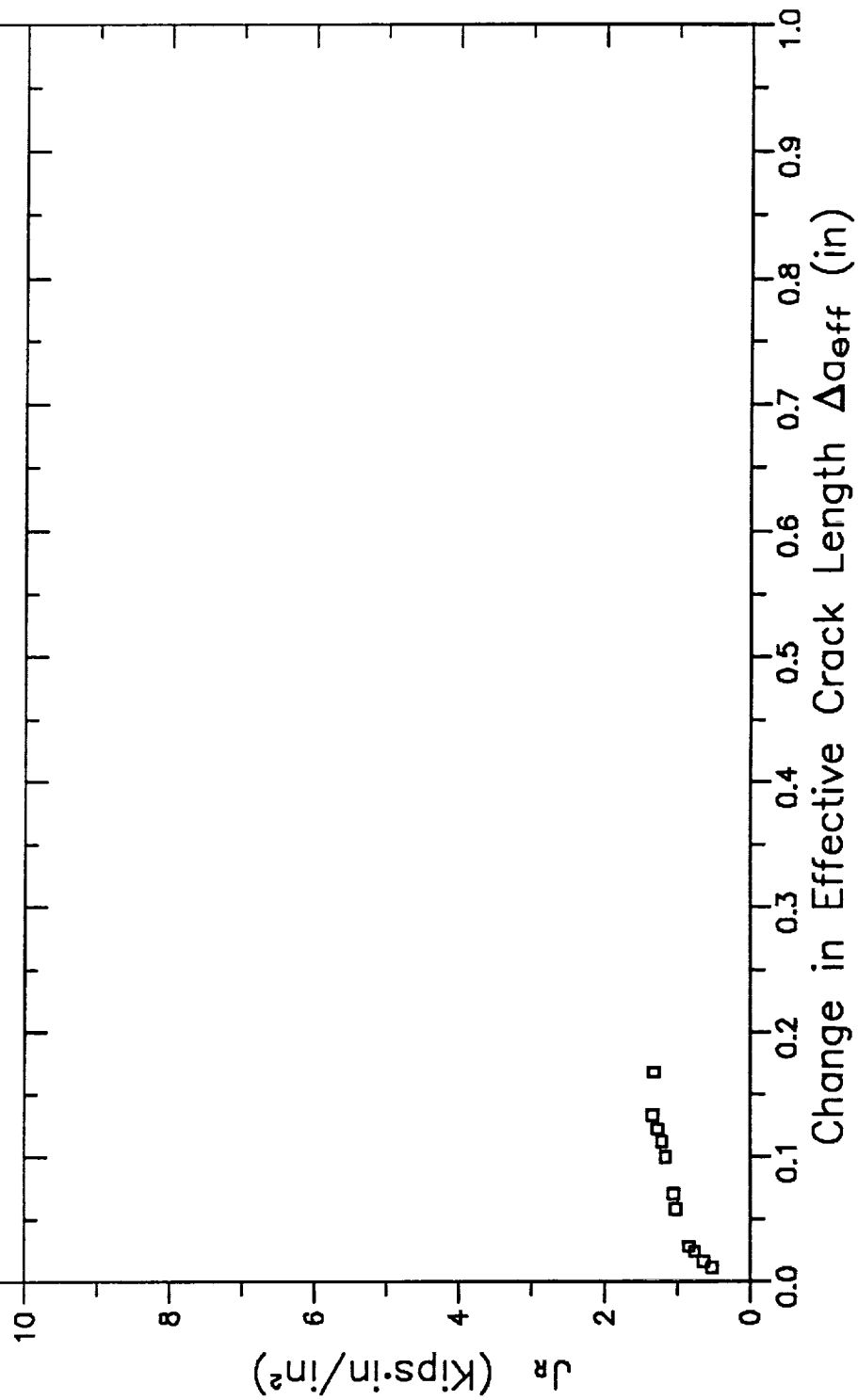


# RESISTANCE CURVE

A533B/A508 - NOT SPECIFIED

Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA

Reference: NRC04  
Environment: Unknown; 550.4°F  
Specimen Thickness: 0.4 in.  
Specimen Width: NA



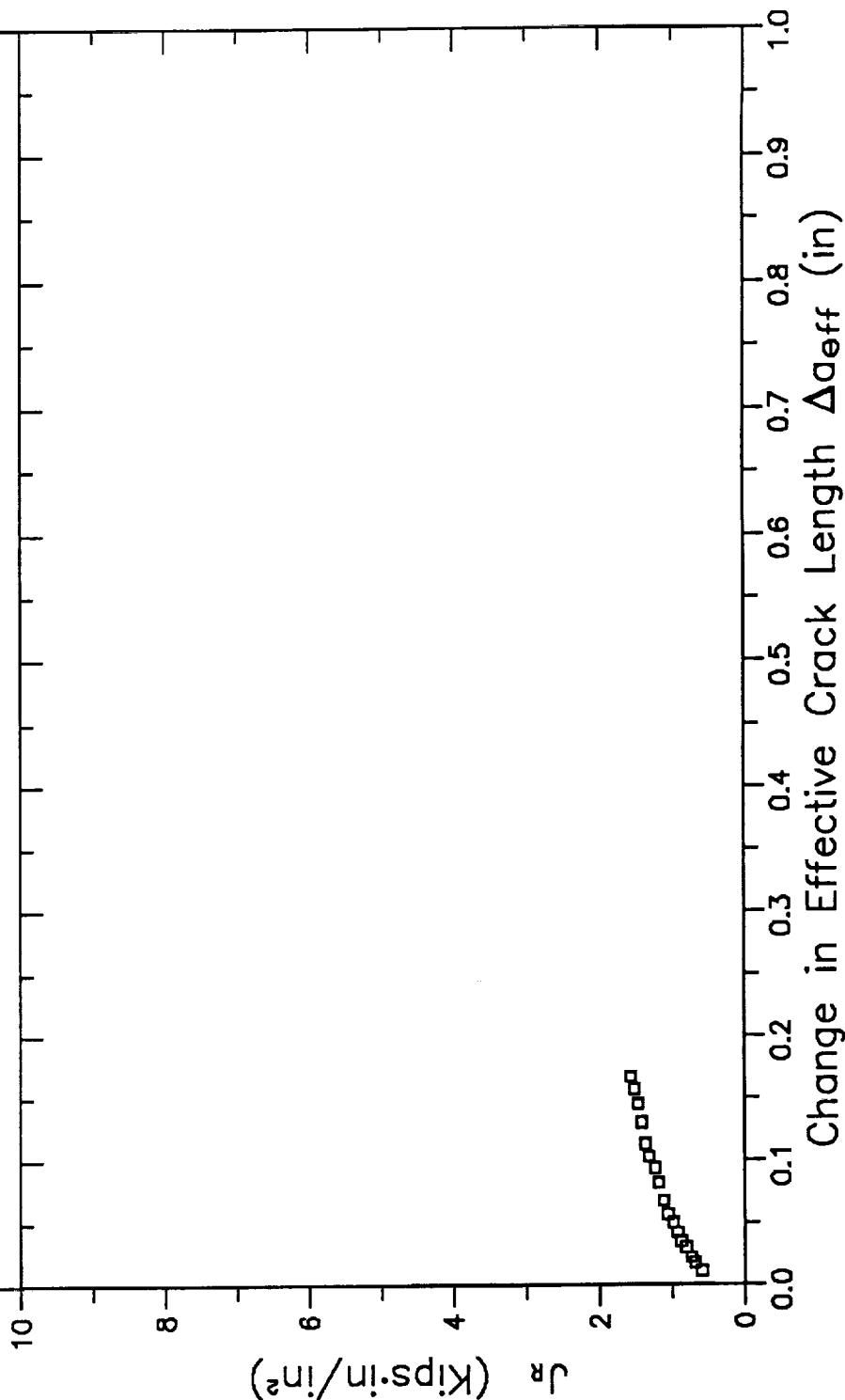


# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 550.4°F

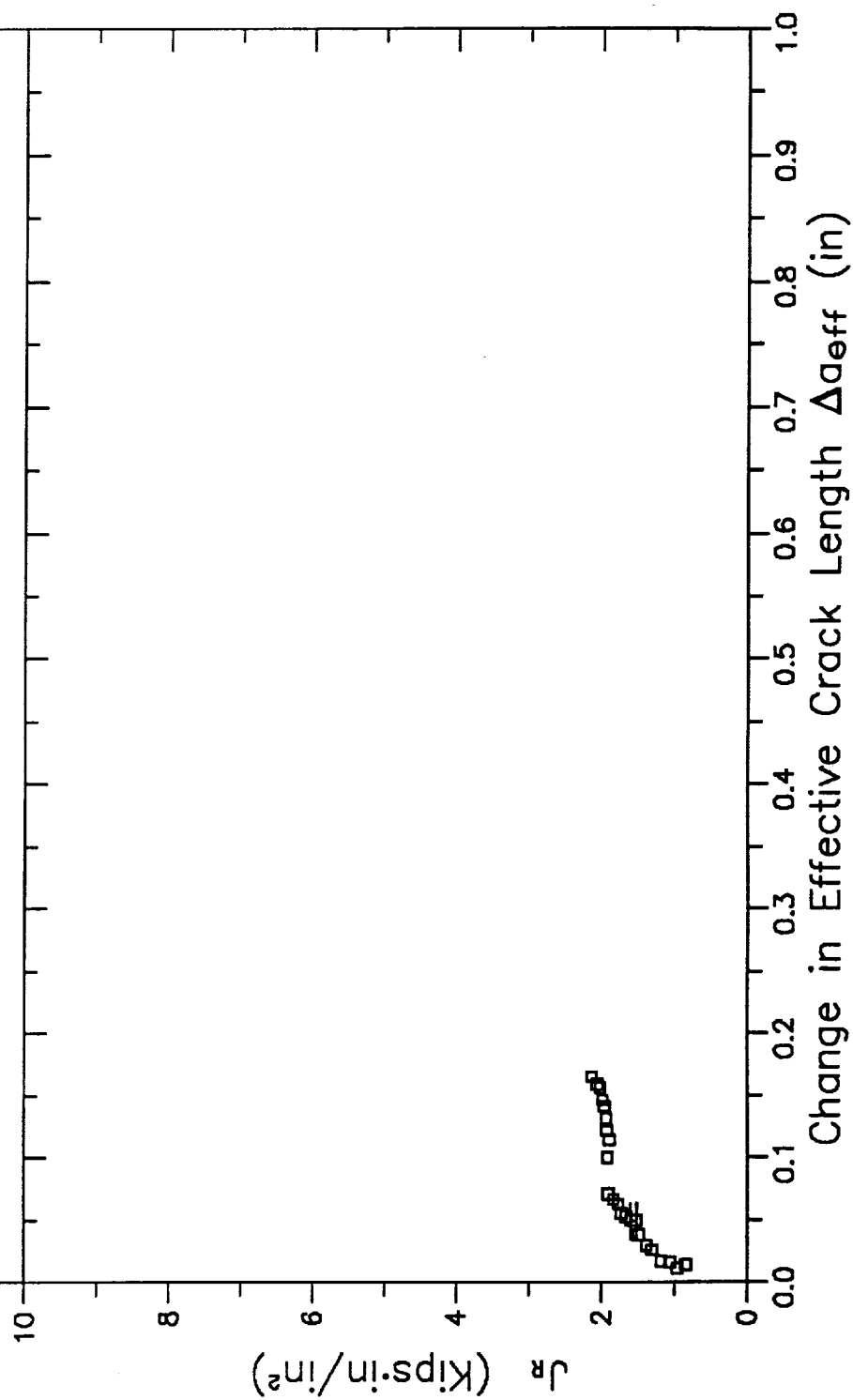
Specimen Thickness: 0.4 in.  
Specimen Width: NA



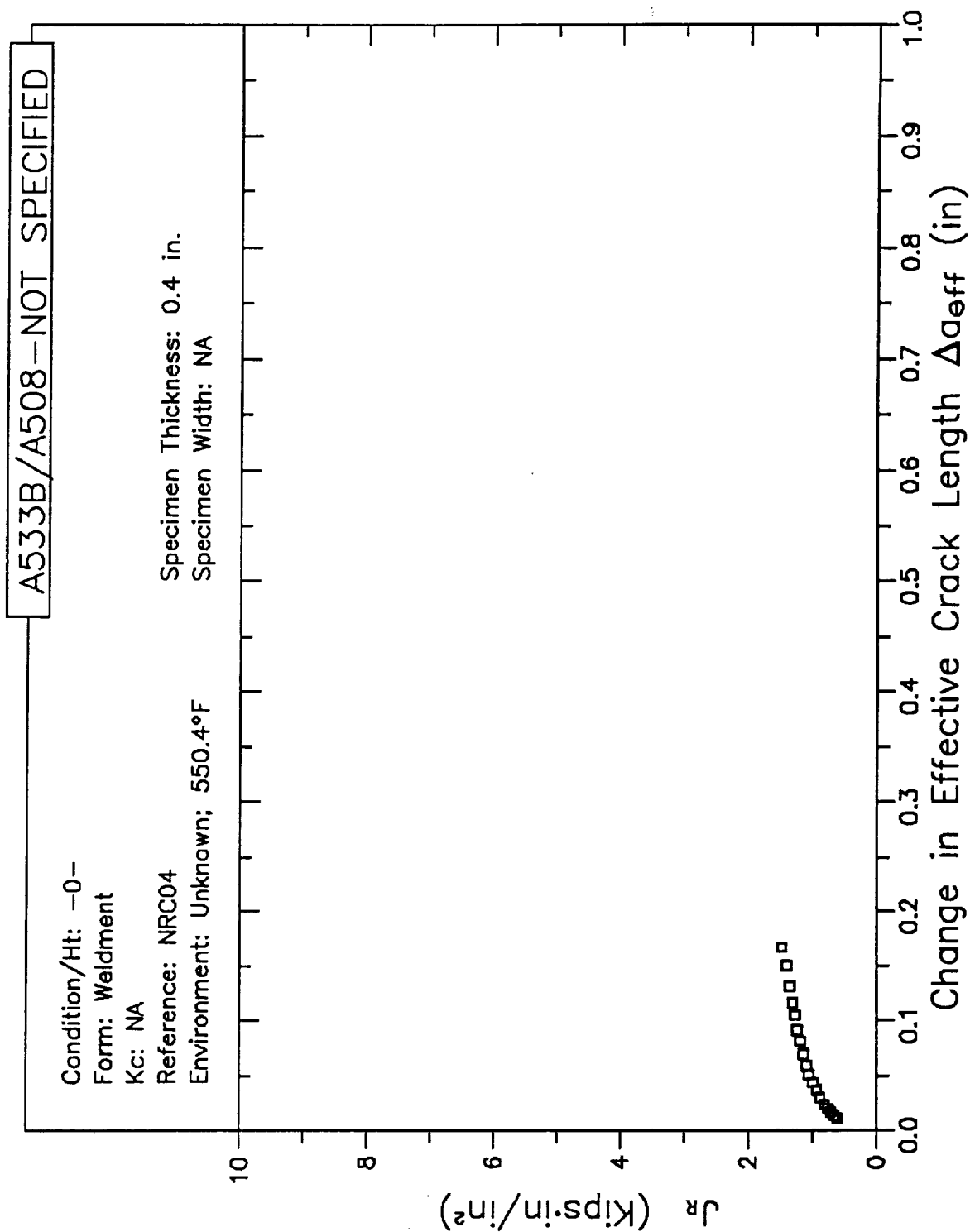
# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 550.4°F  
Specimen Thickness: 0.4 in.  
Specimen Width: NA



# RESISTANCE CURVE

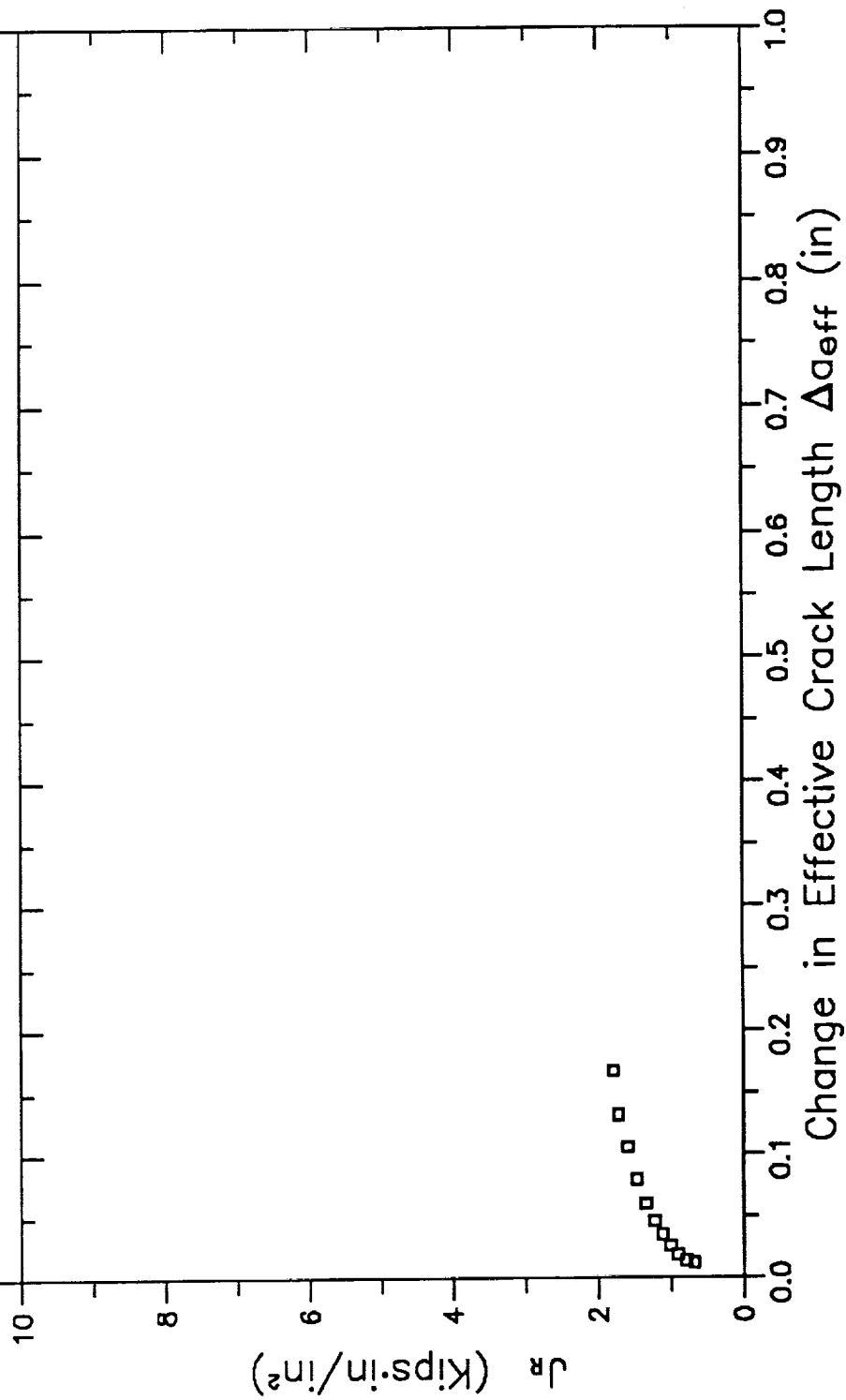


# RESISTANCE CURVE

A533B/A508--NOT SPECIFIED

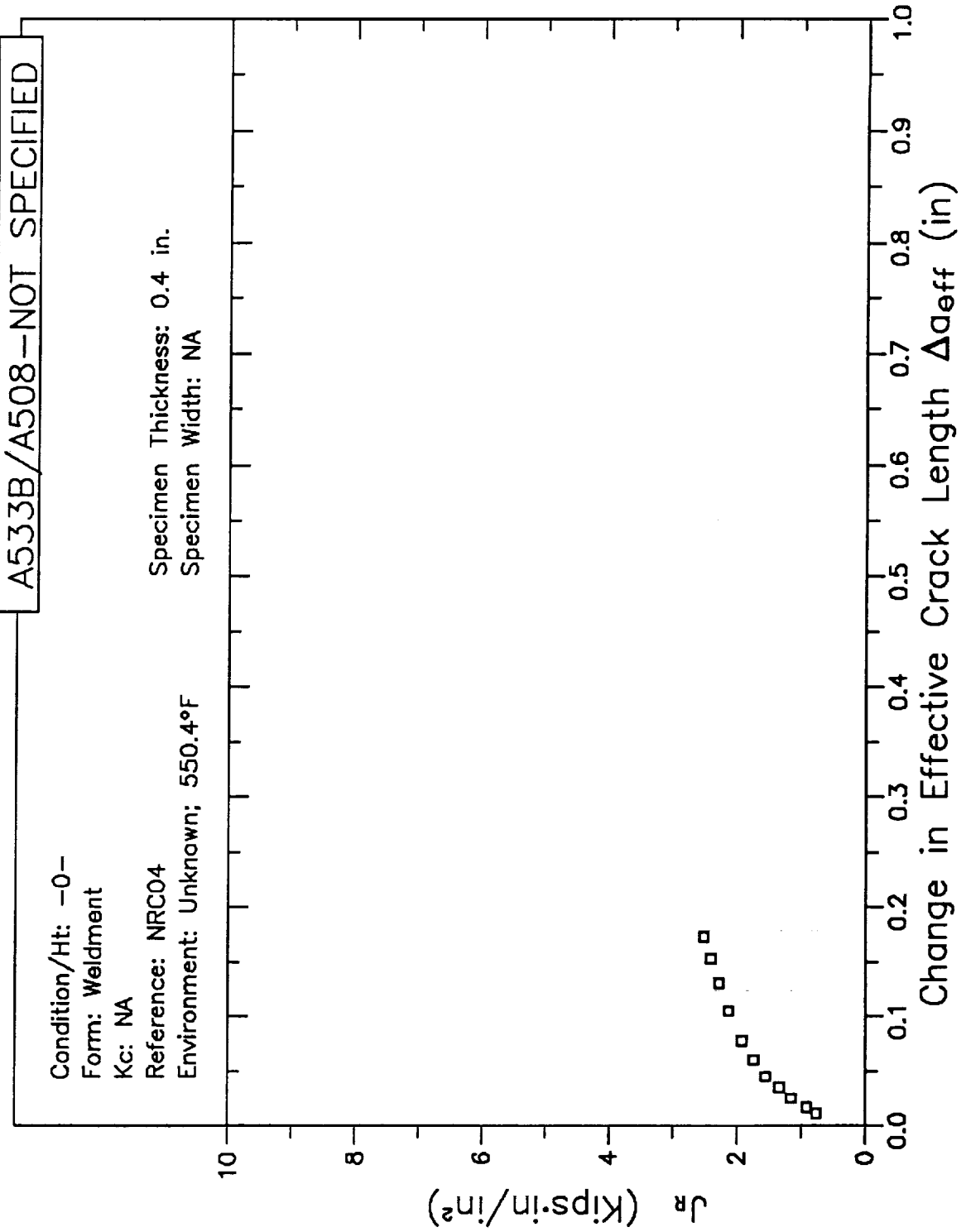
Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 550.4°F

Specimen Thickness: 0.4 in.  
Specimen Width: NA



B3-220

# RESISTANCE CURVE



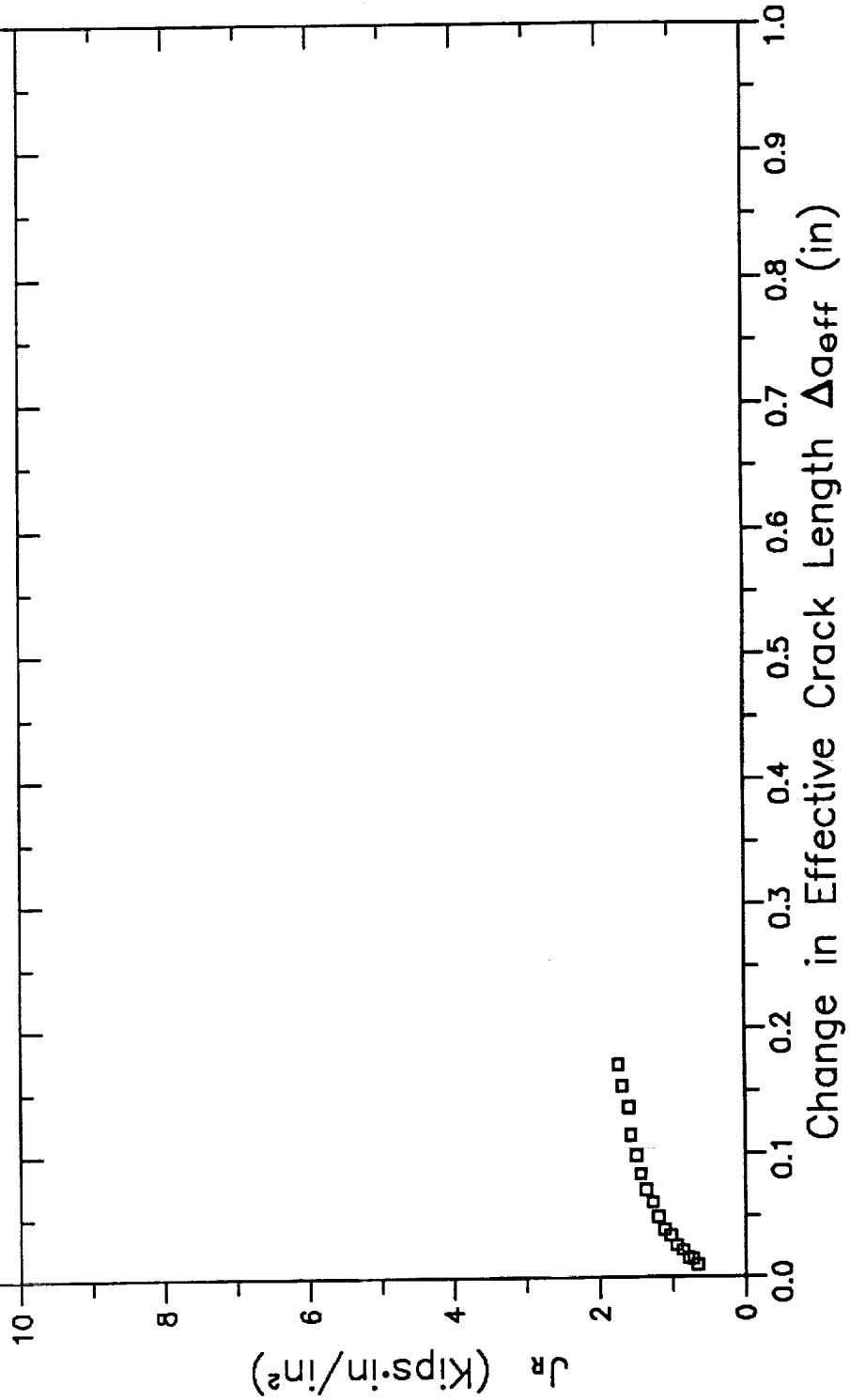
B3-221

# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

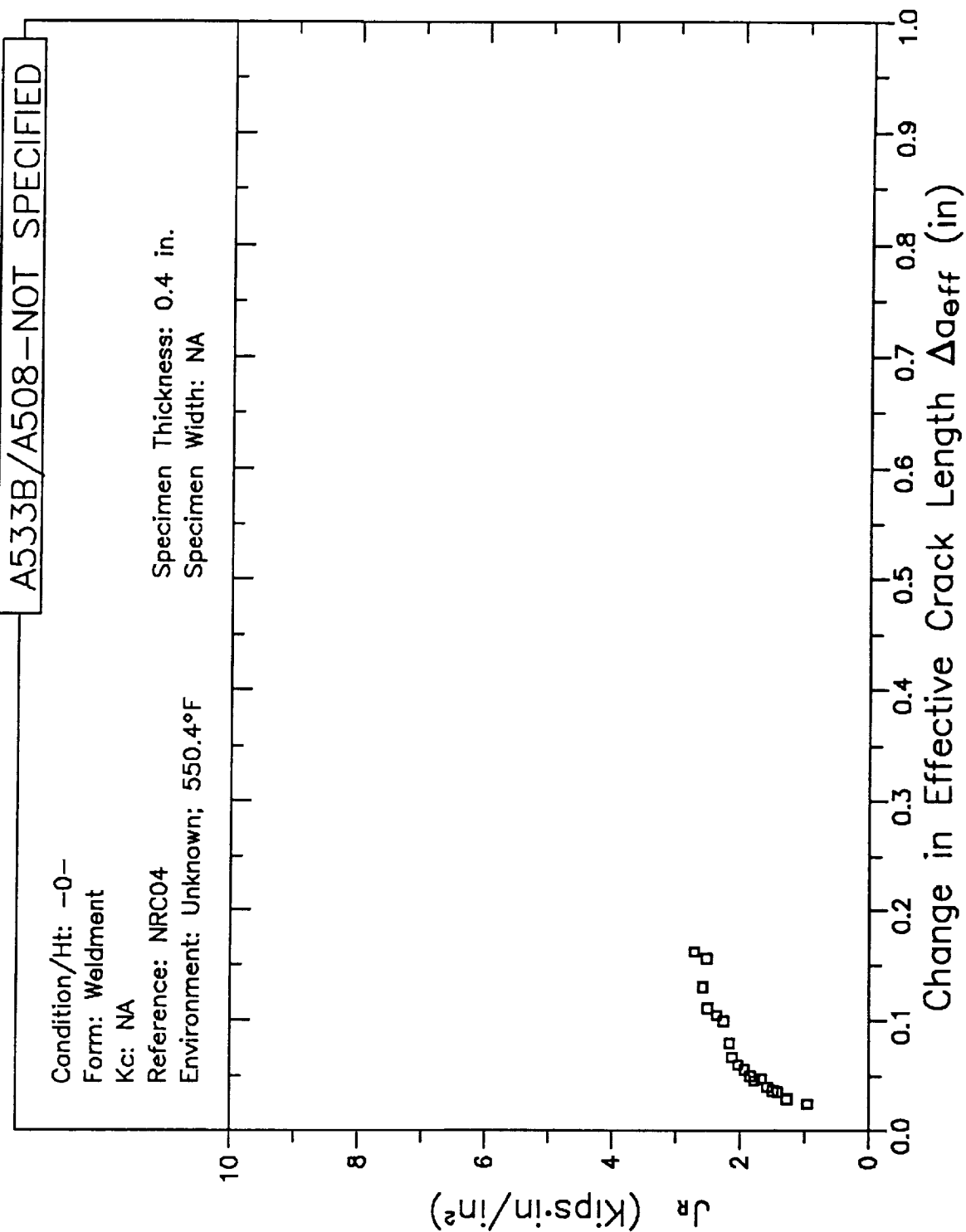
Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 550.4°F

Specimen Thickness: 0.4 in.  
Specimen Width: NA



B3-222

# RESISTANCE CURVE

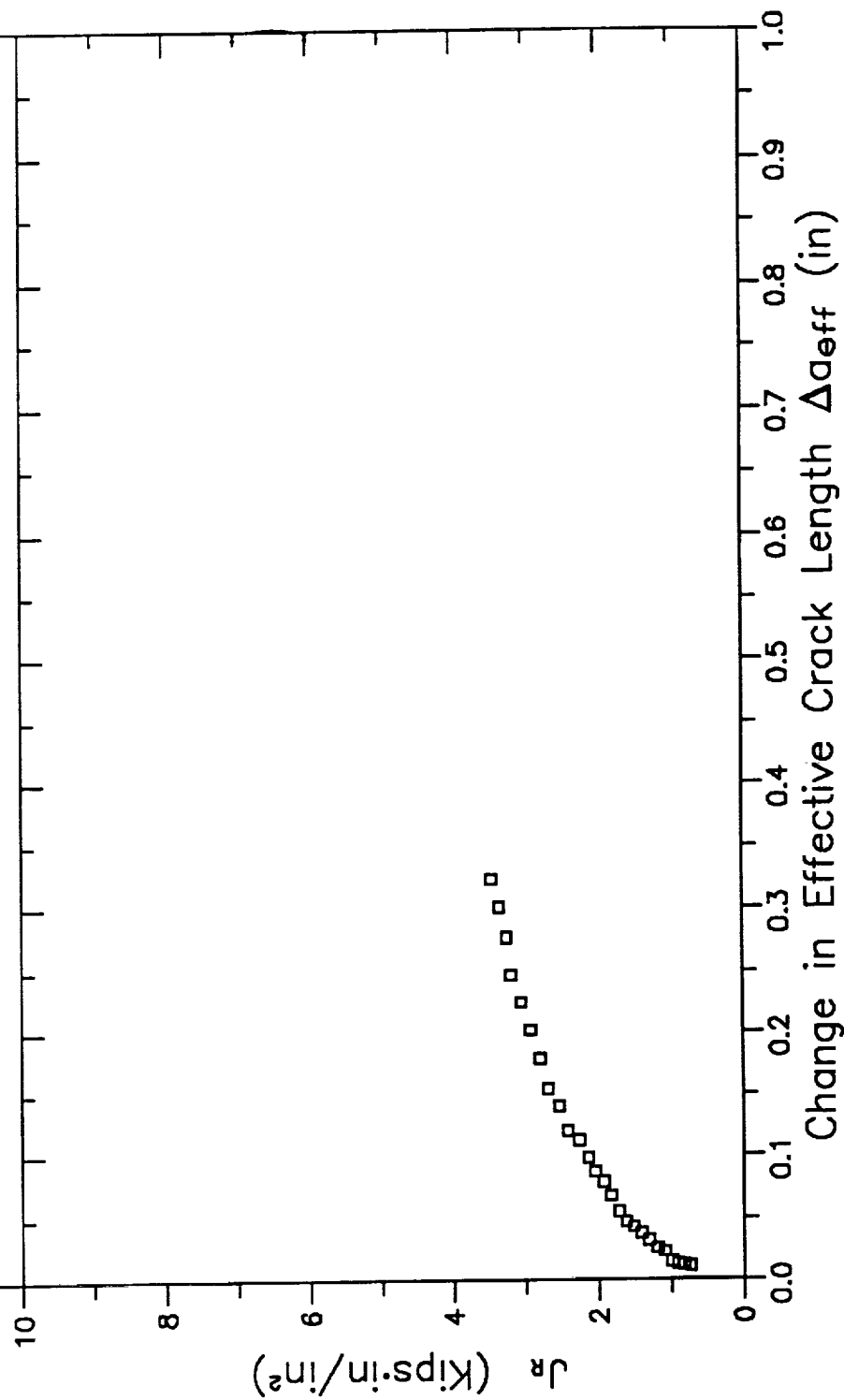


# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

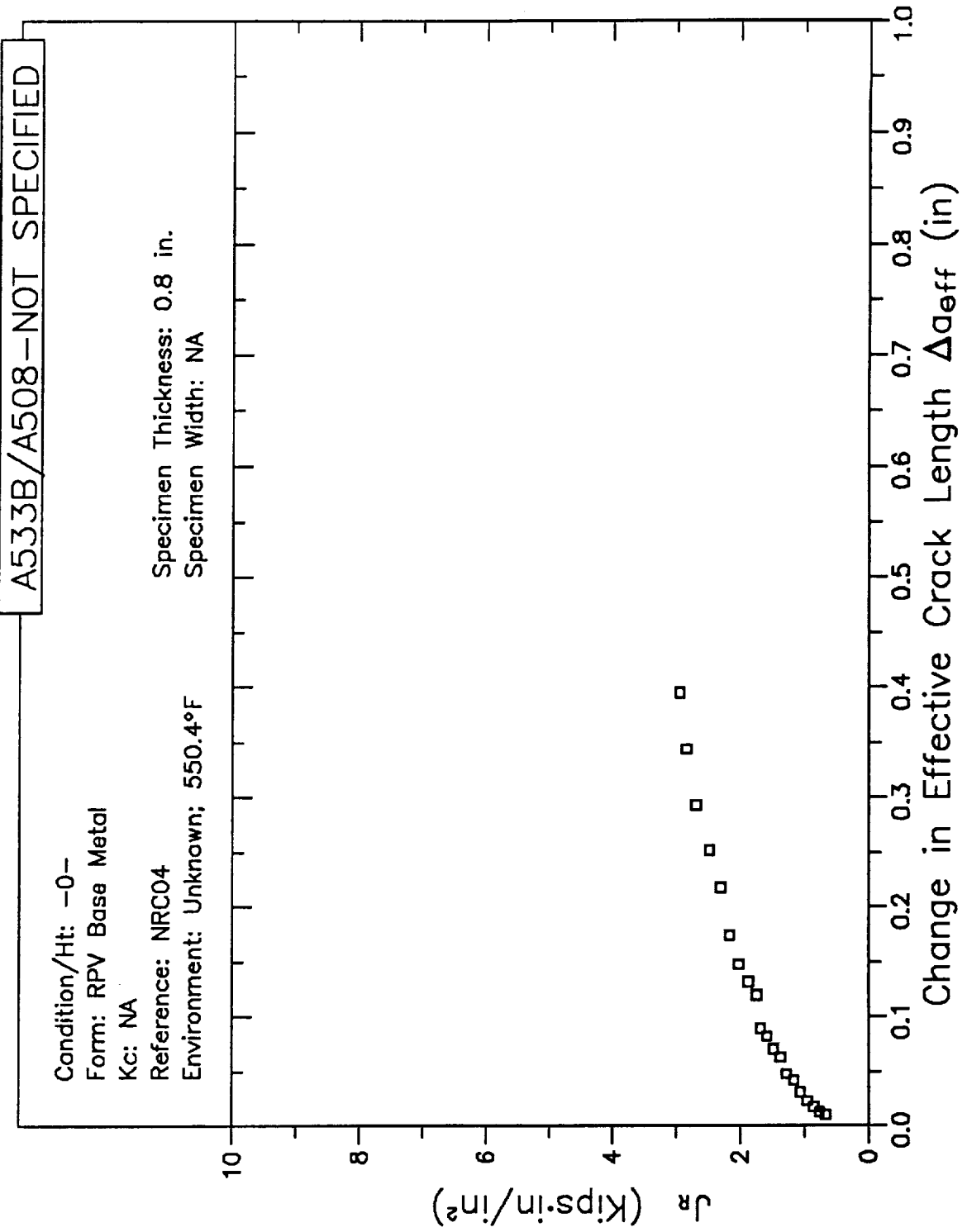
Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 550.4°F

Specimen Thickness: 0.8 in.  
Specimen Width: NA





# RESISTANCE CURVE

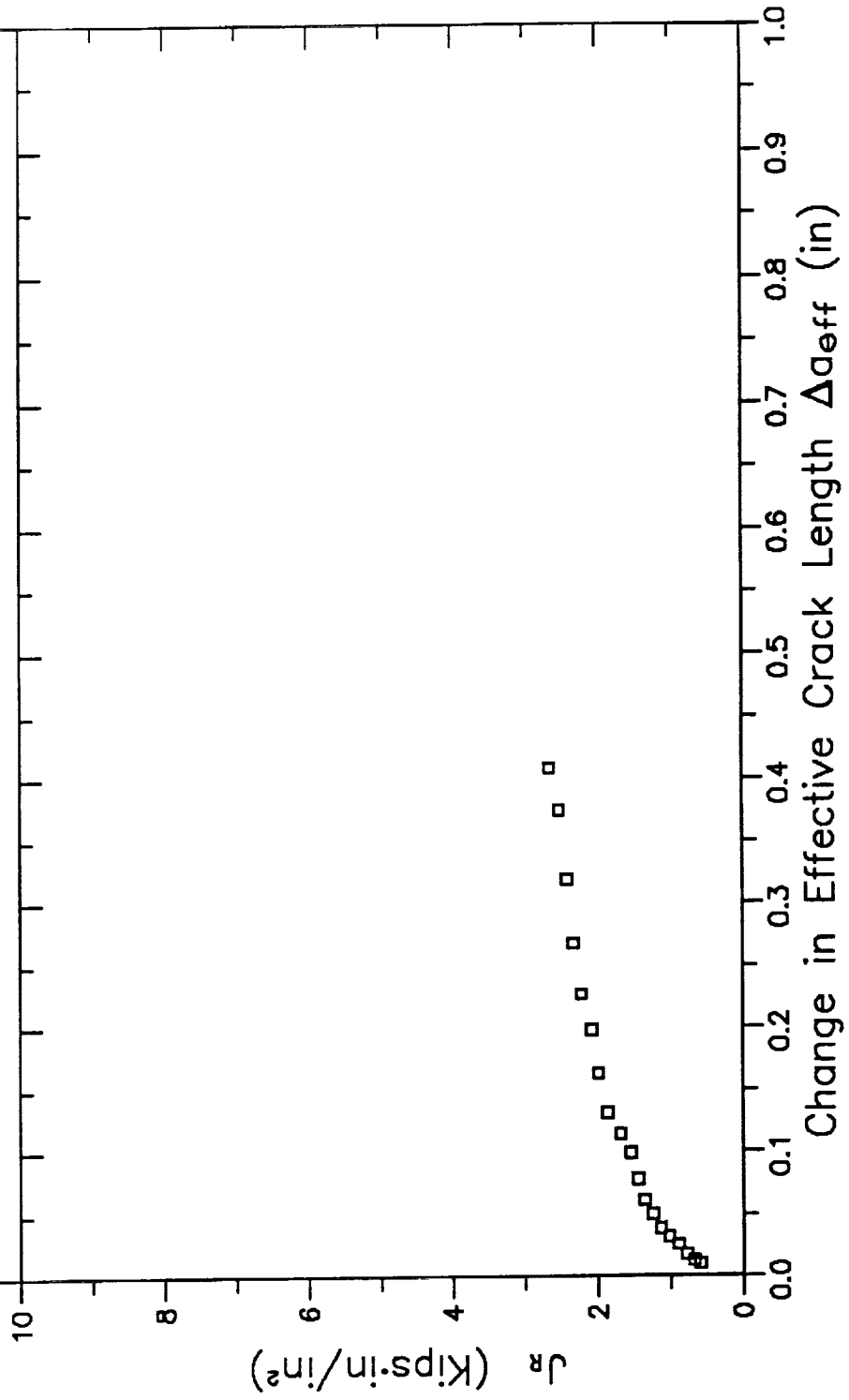


# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 550.4°F

Specimen Thickness: 0.8 in.  
Specimen Width: NA



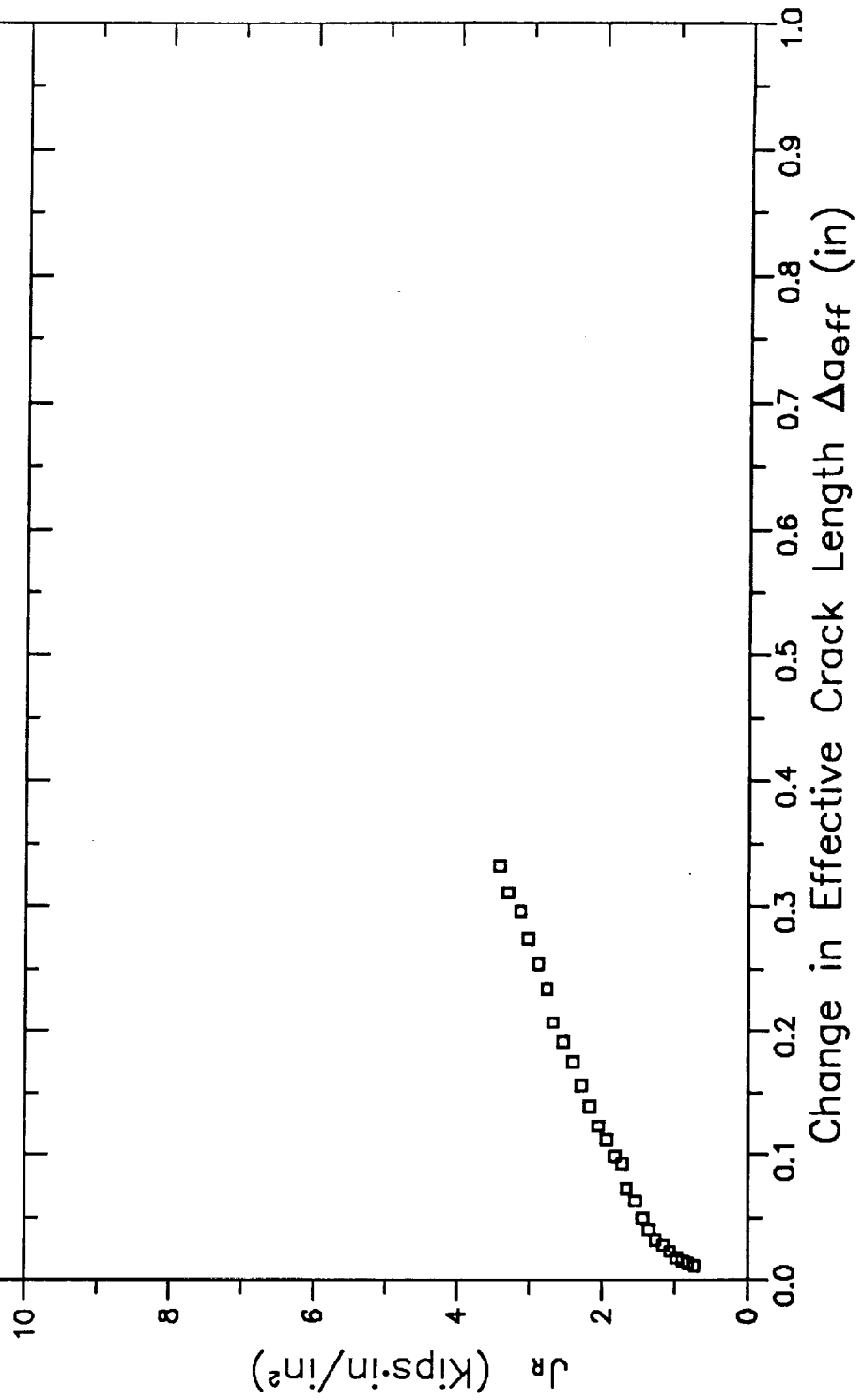
B3-226

# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 550.4°F

Specimen Thickness: 0.8 in.  
Specimen Width: NA

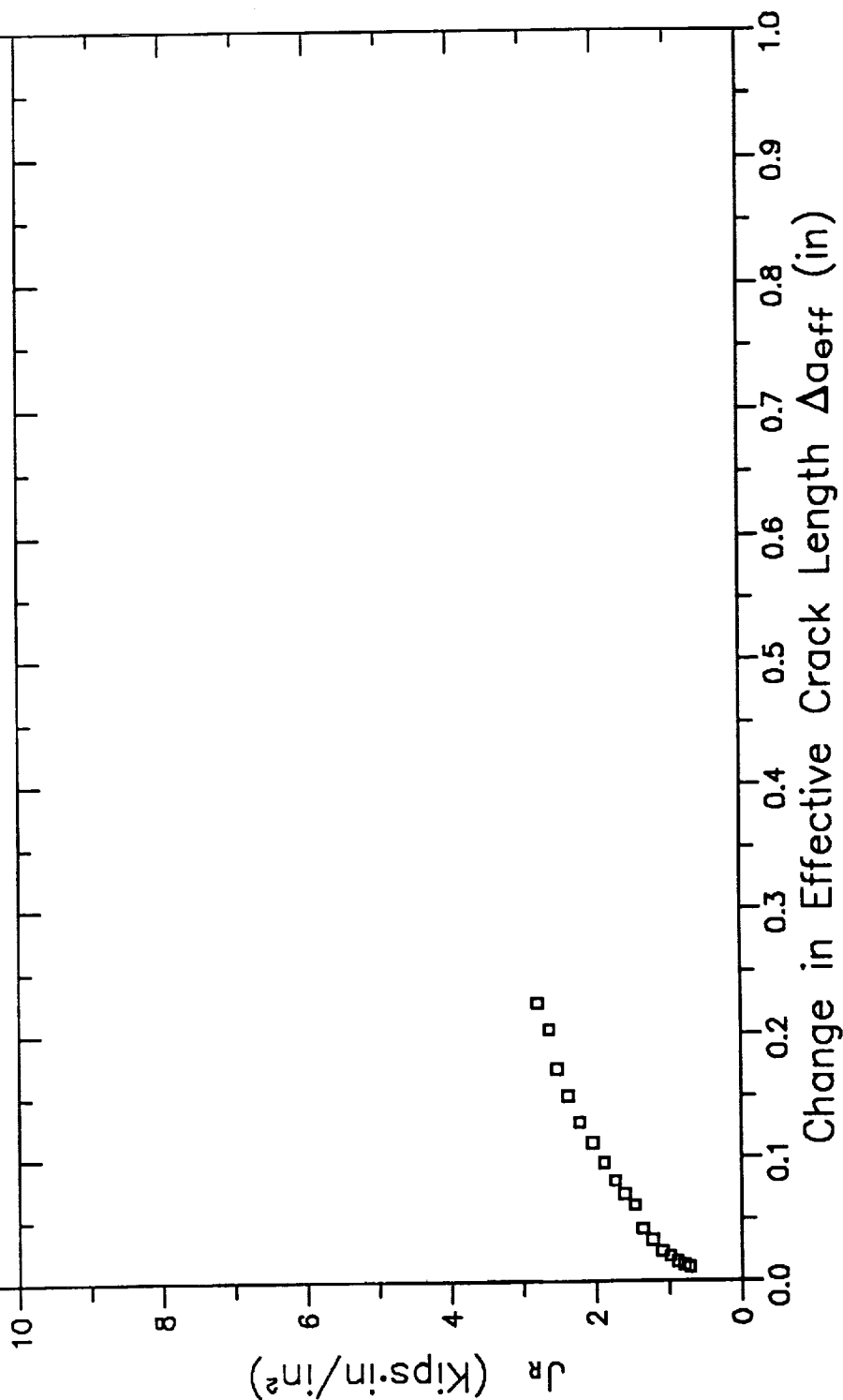


# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 550.4°F

Specimen Thickness: 0.8 in.  
Specimen Width: NA

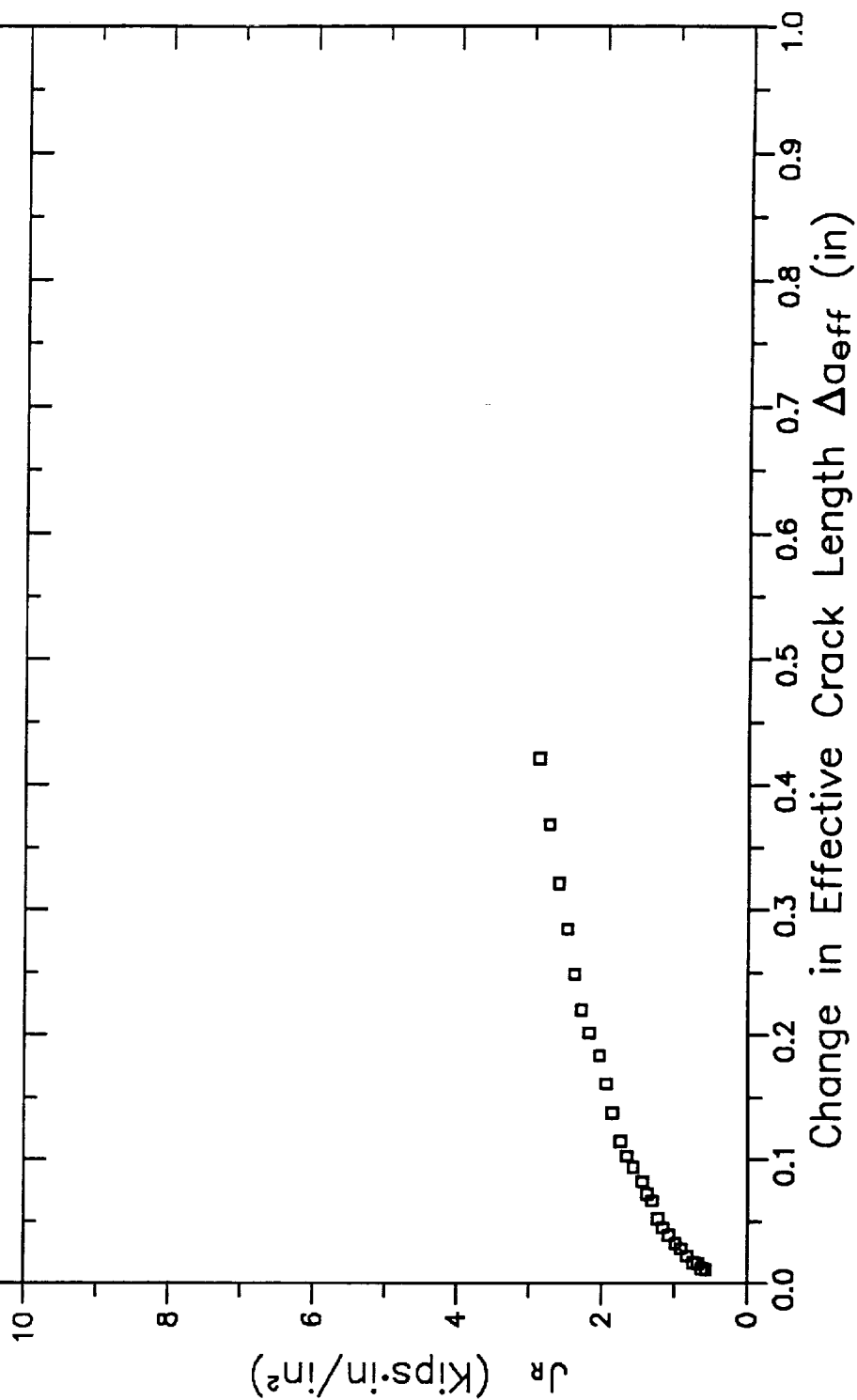


# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

Condition/Ht: -0-  
Form: RPV Base Metal  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 550.4°F

Specimen Thickness: 0.8 in.  
Specimen Width: NA

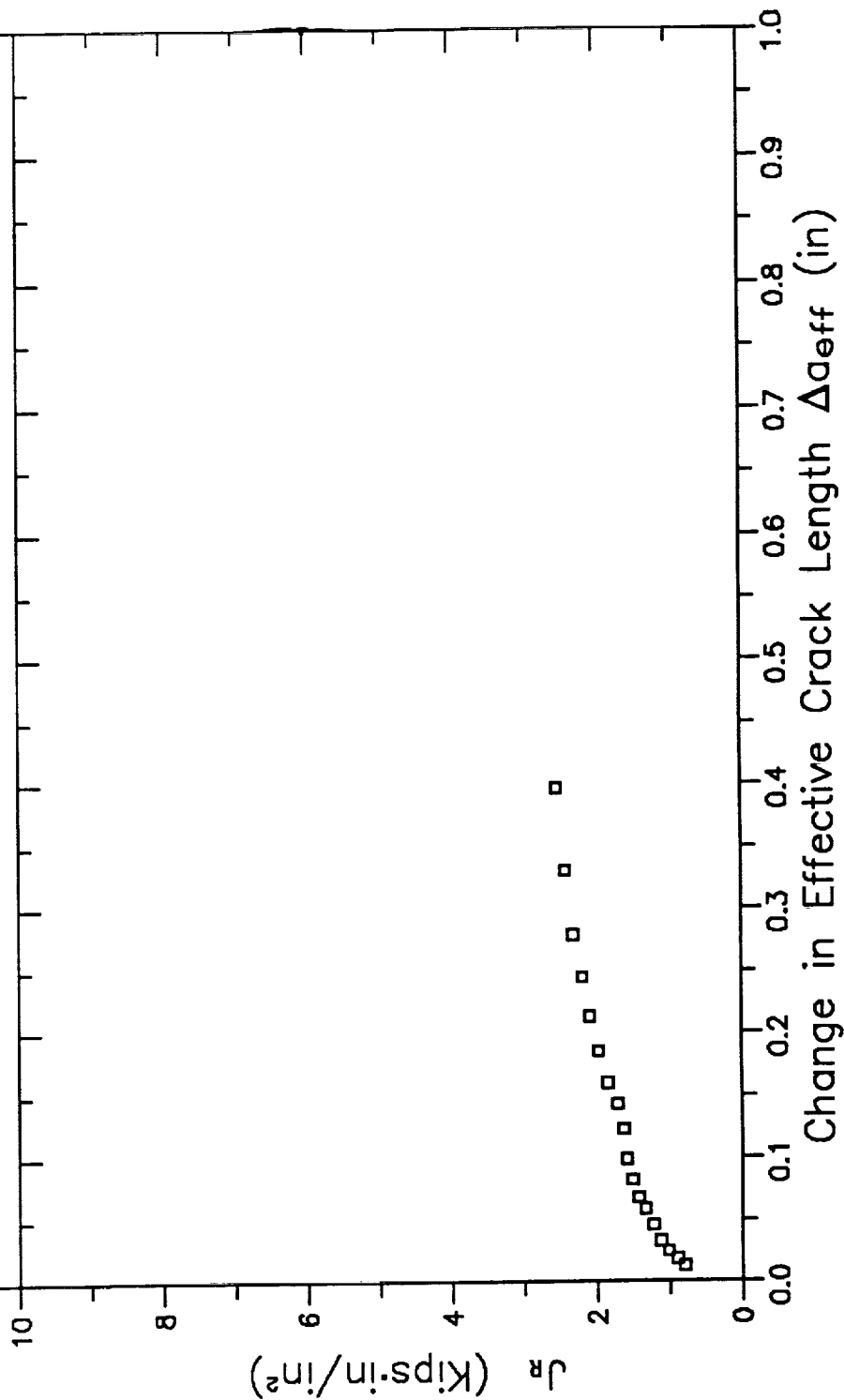


# RESISTANCE CURVE

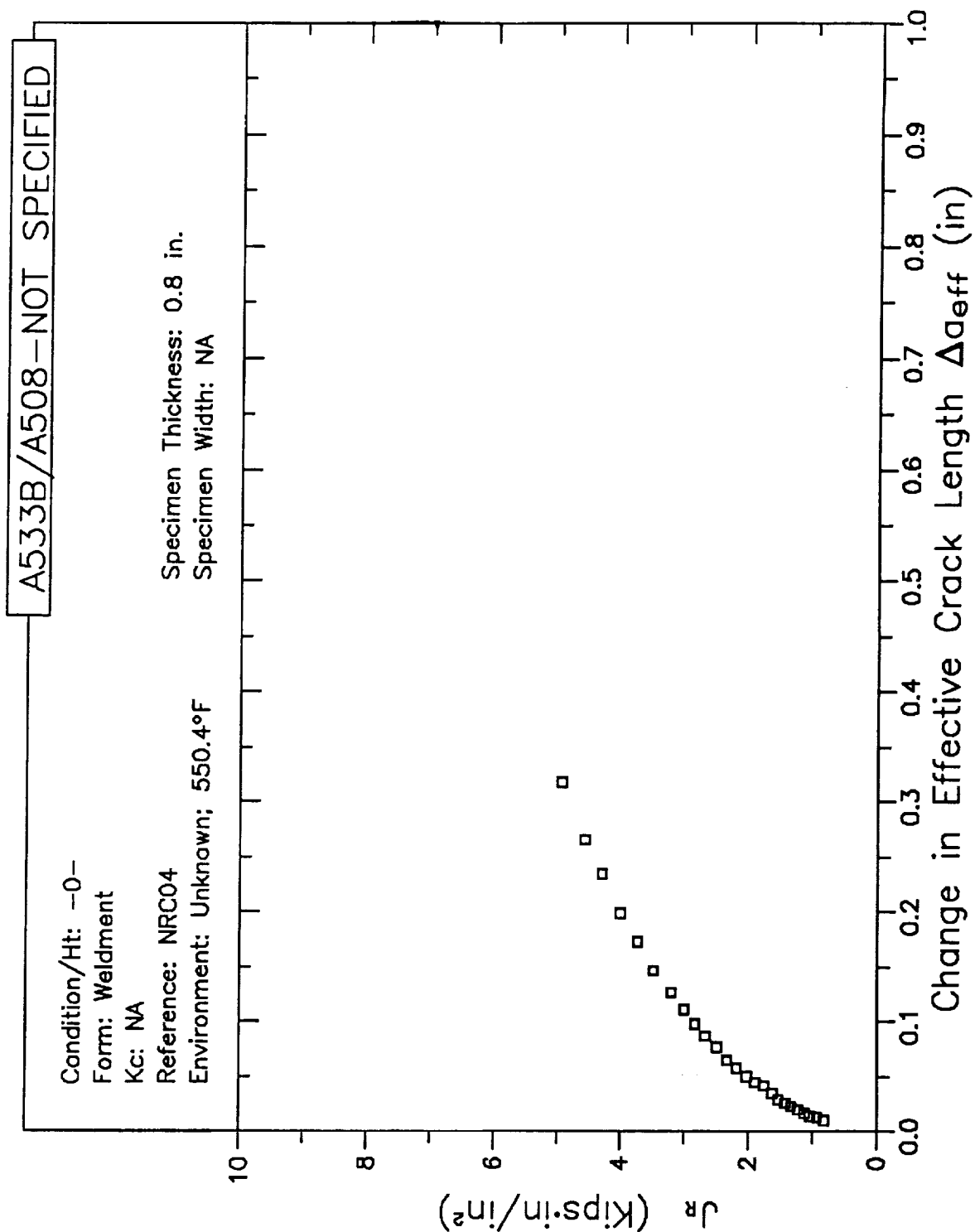
A533B/A508—NOT SPECIFIED

Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 550.4°F

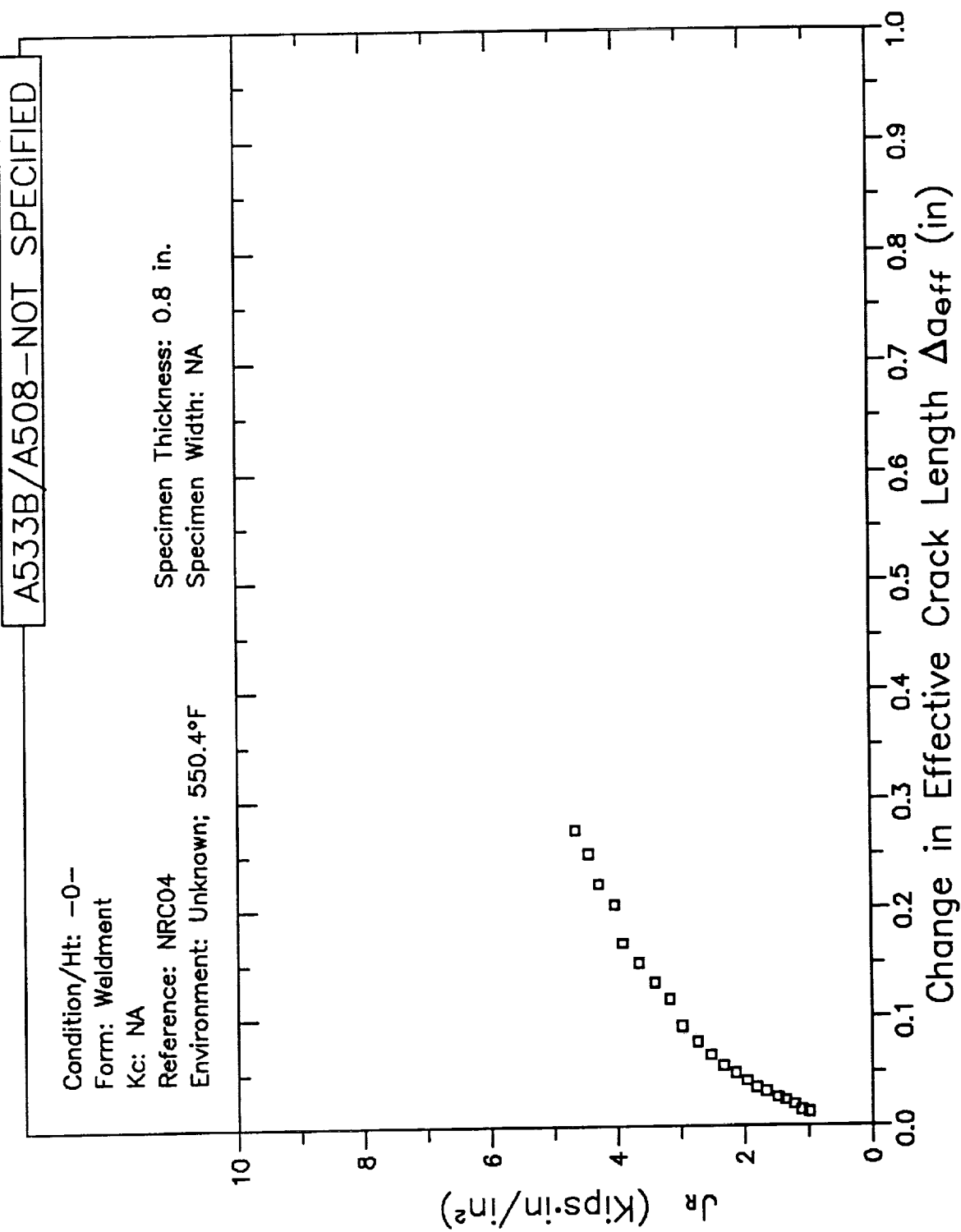
Specimen Thickness: 0.8 in.  
Specimen Width: NA



# RESISTANCE CURVE



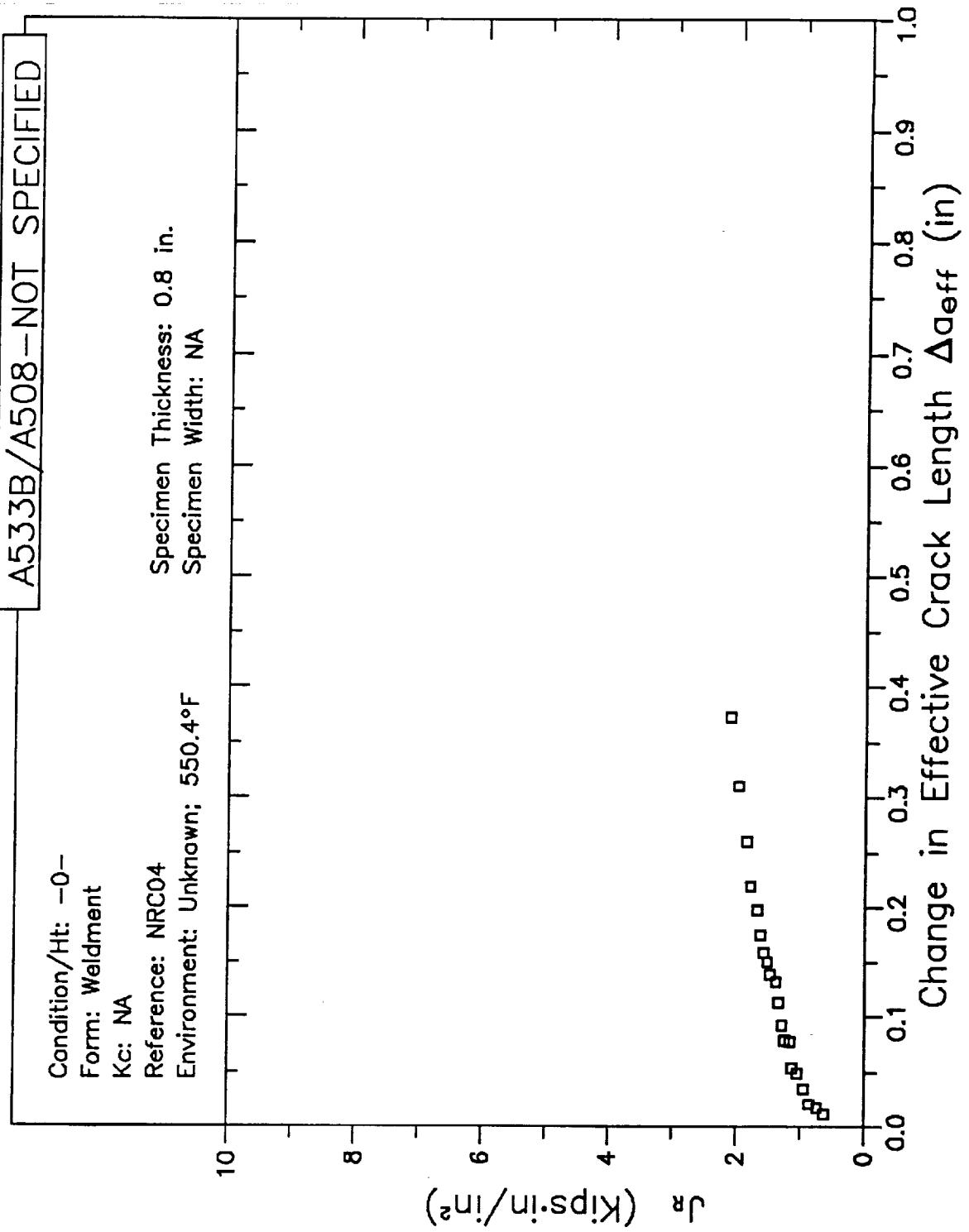
# RESISTANCE CURVE



B3-232



# RESISTANCE CURVE



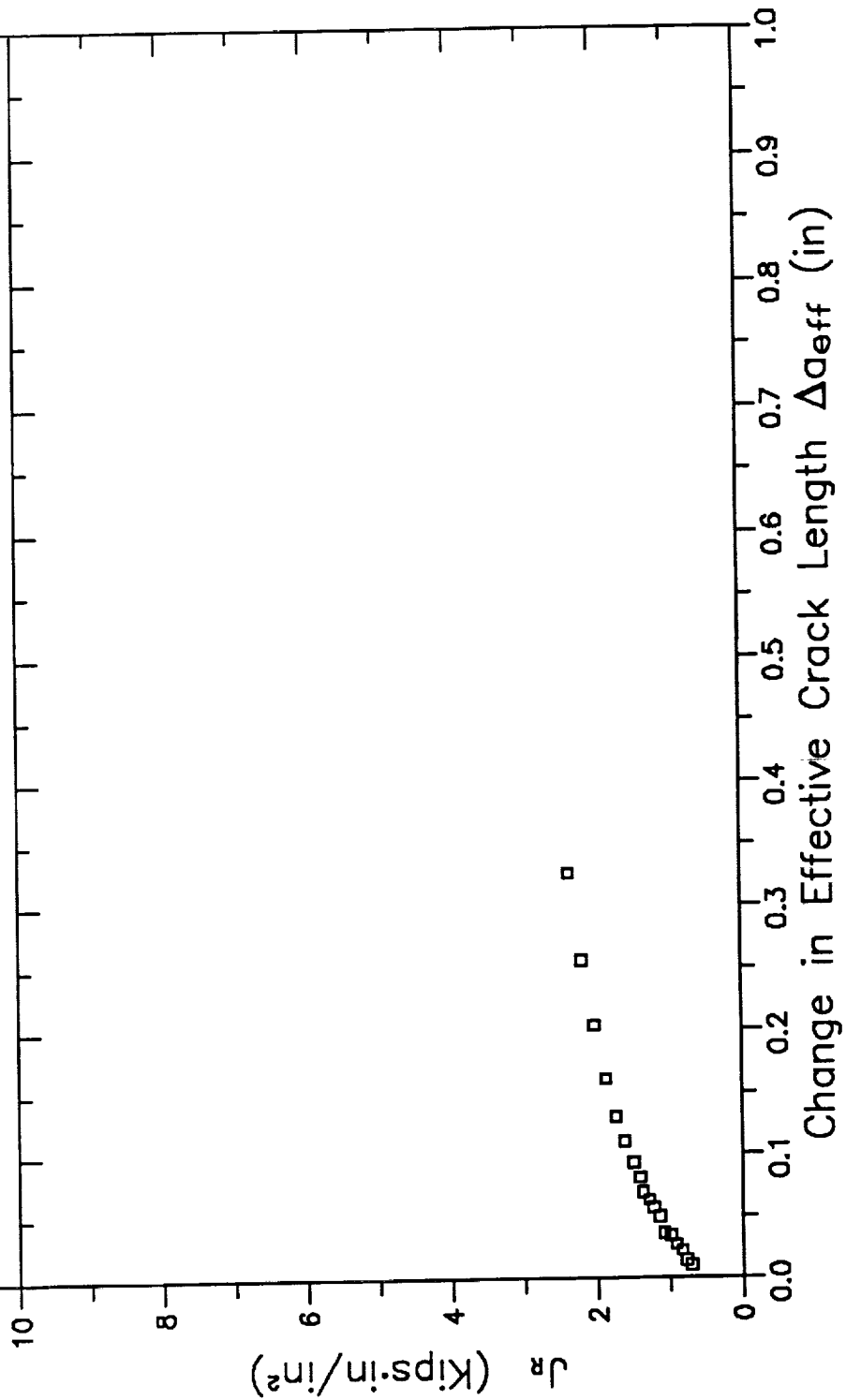
B3-233

# RESISTANCE CURVE

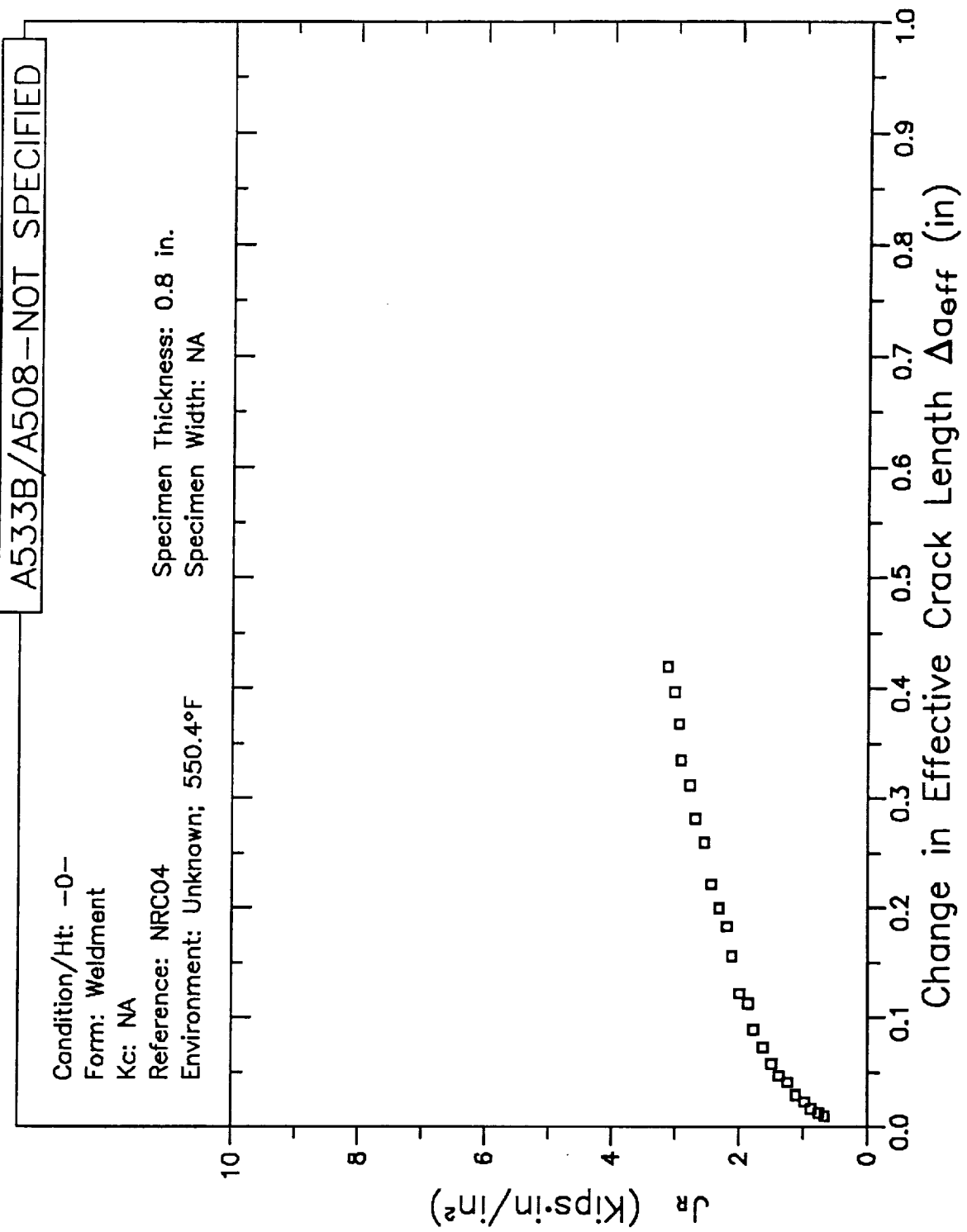
A533B/A508—NOT SPECIFIED

Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 550.4°F

Specimen Thickness: 0.8 in.  
Specimen Width: NA



# RESISTANCE CURVE

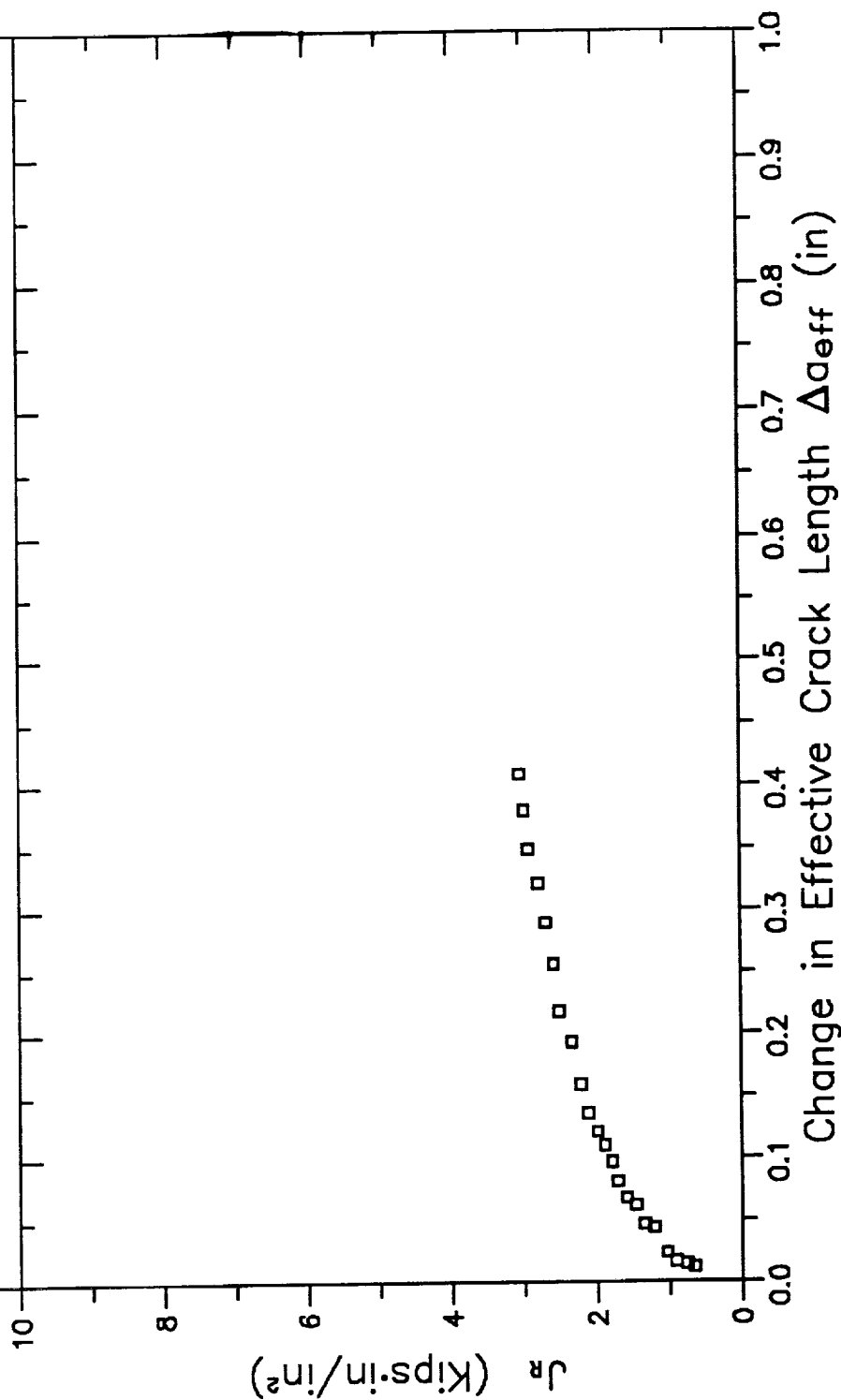


# RESISTANCE CURVE

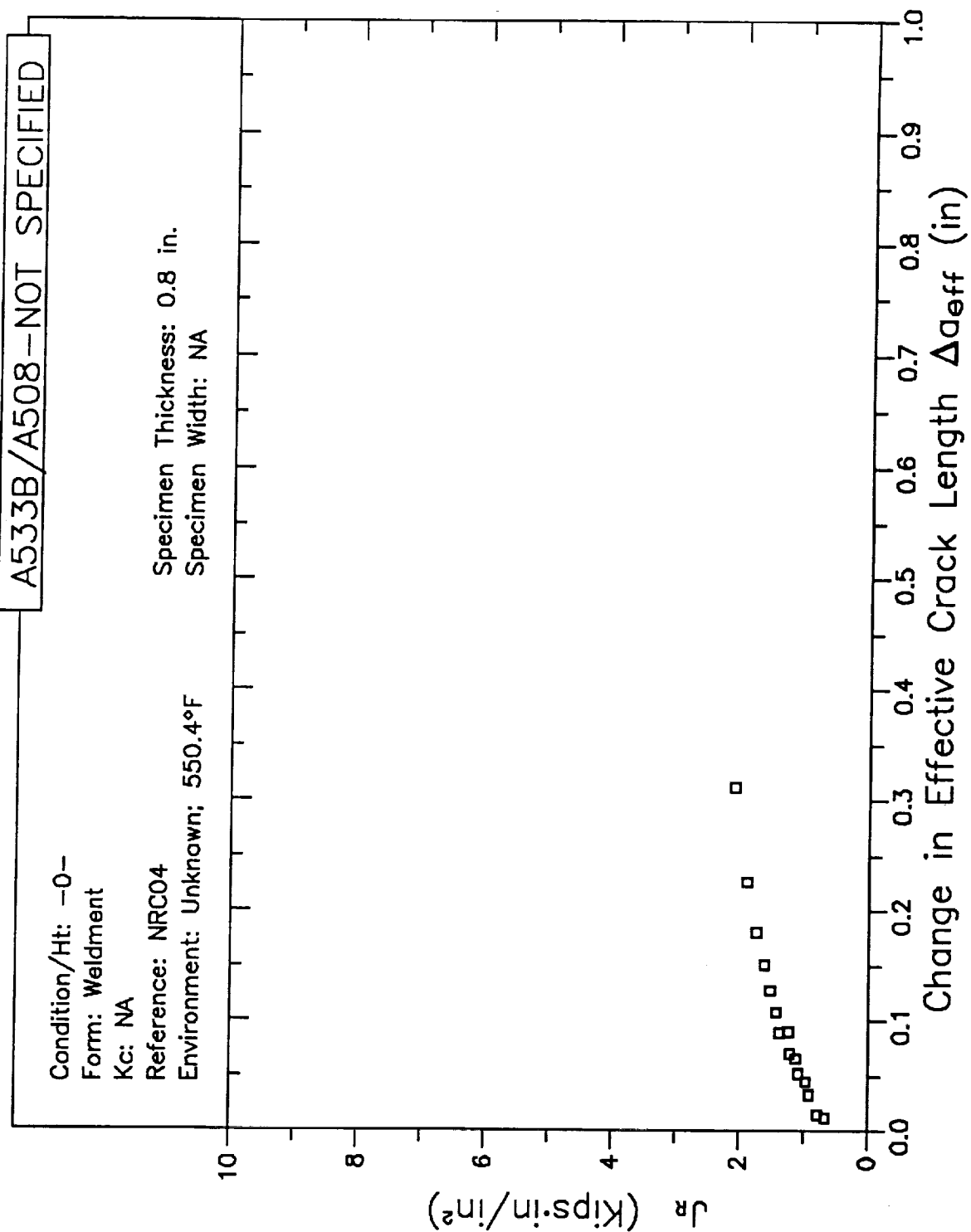
A533B/A508—NOT SPECIFIED

Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 550.4°F

Specimen Thickness: 0.8 in.  
Specimen Width: NA



# RESISTANCE CURVE

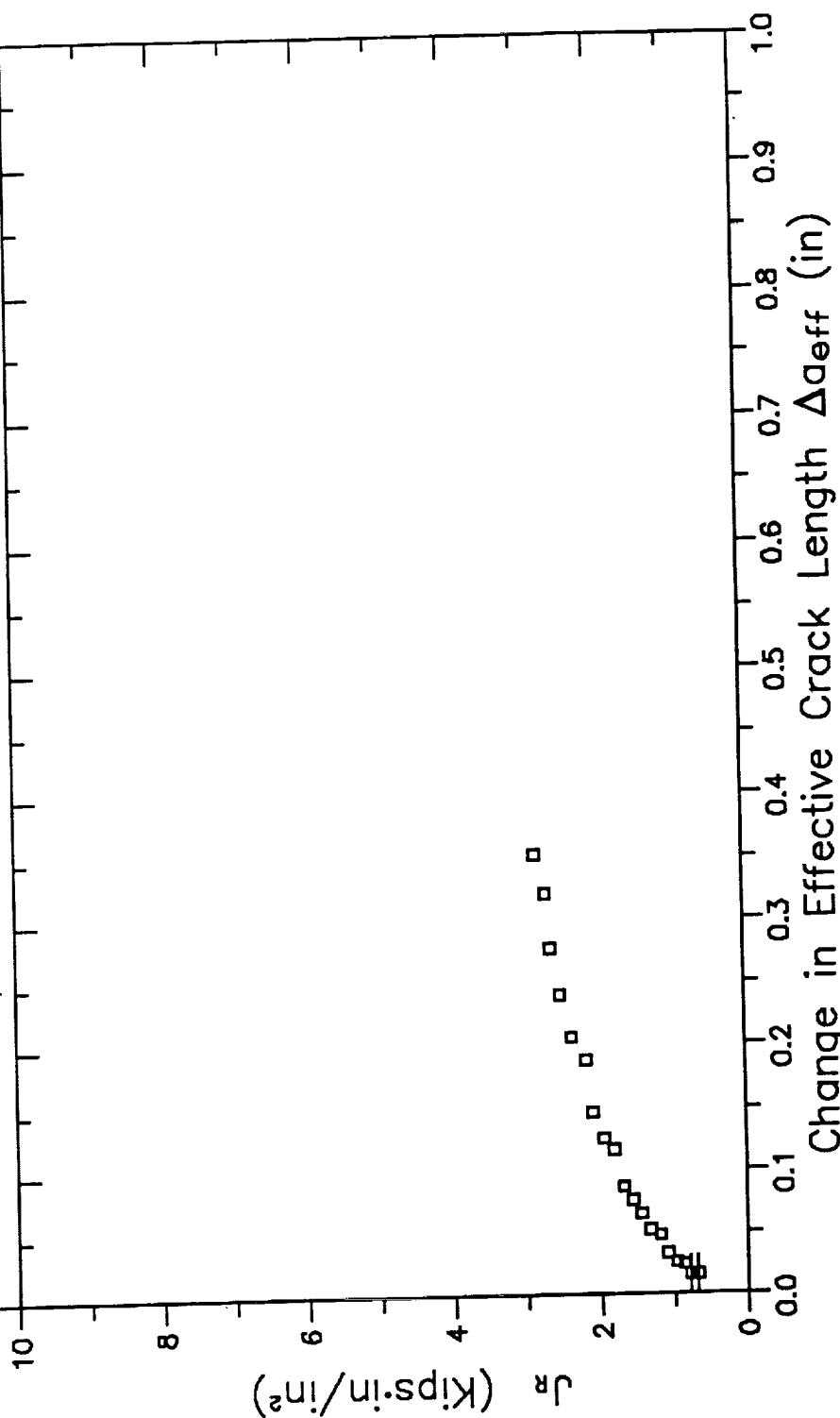


# RESISTANCE CURVE

A533B/A508—NOT SPECIFIED

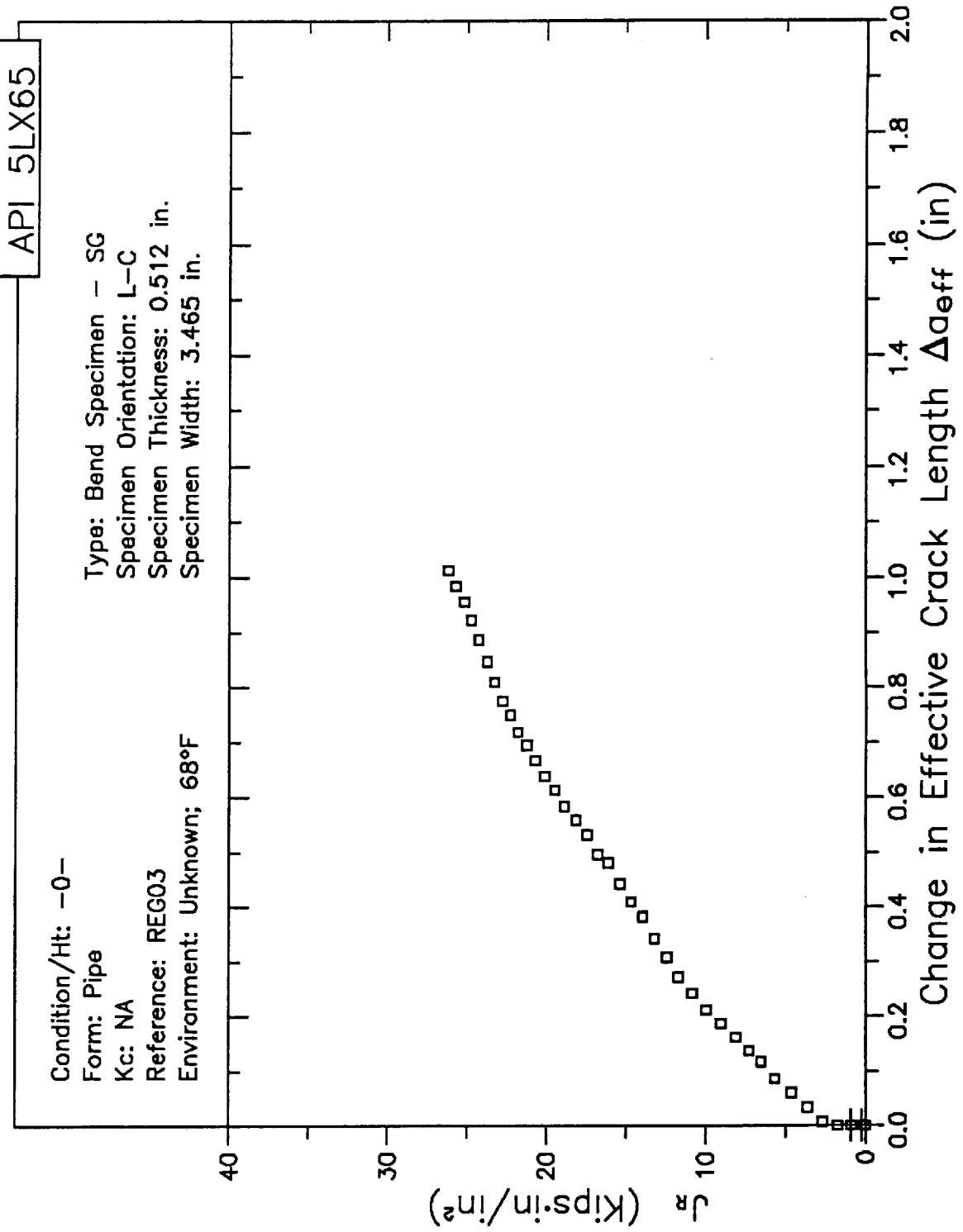
Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 550.4°F

Specimen Thickness: 0.8 in.  
Specimen Width: NA

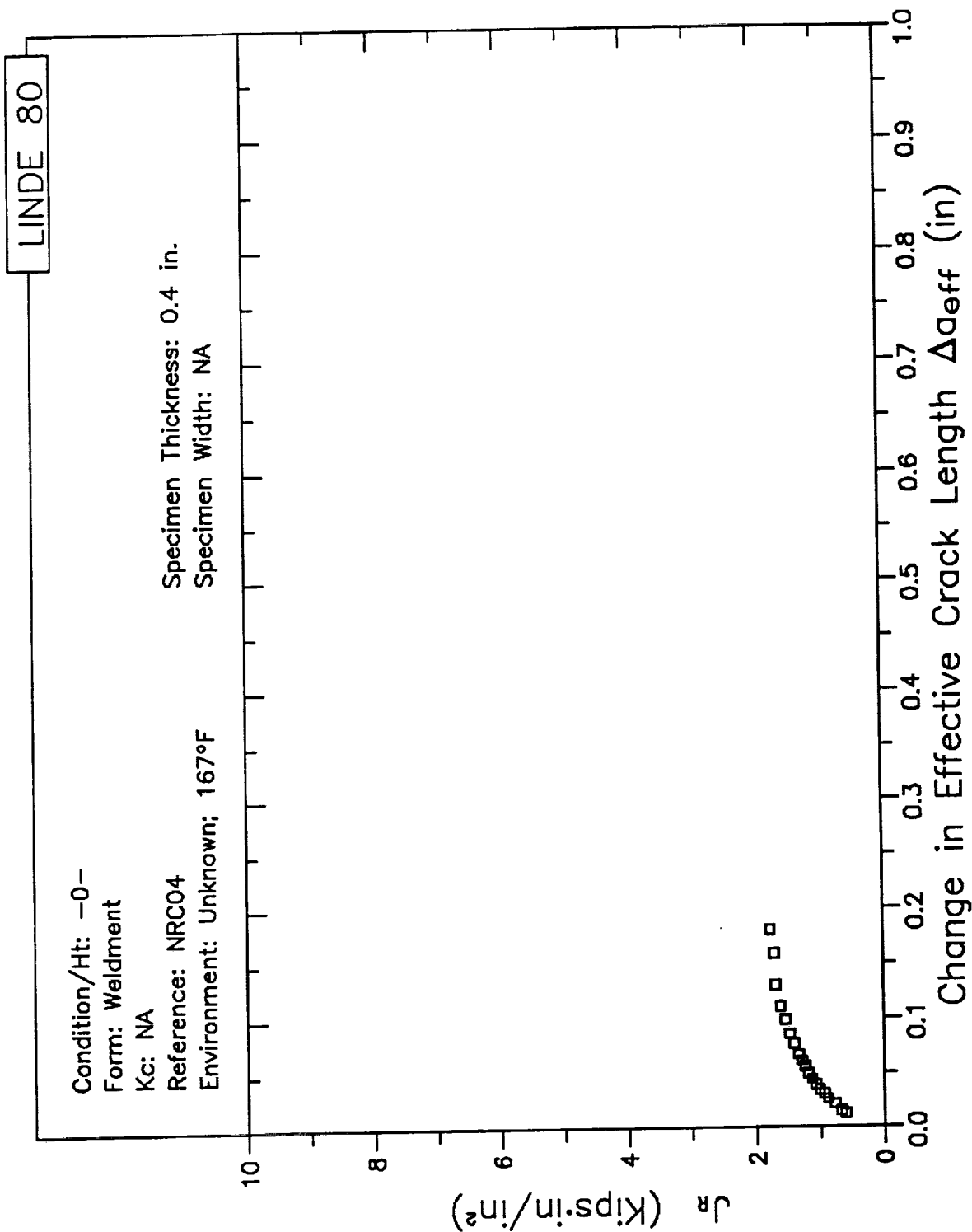


B3-238

# RESISTANCE CURVE



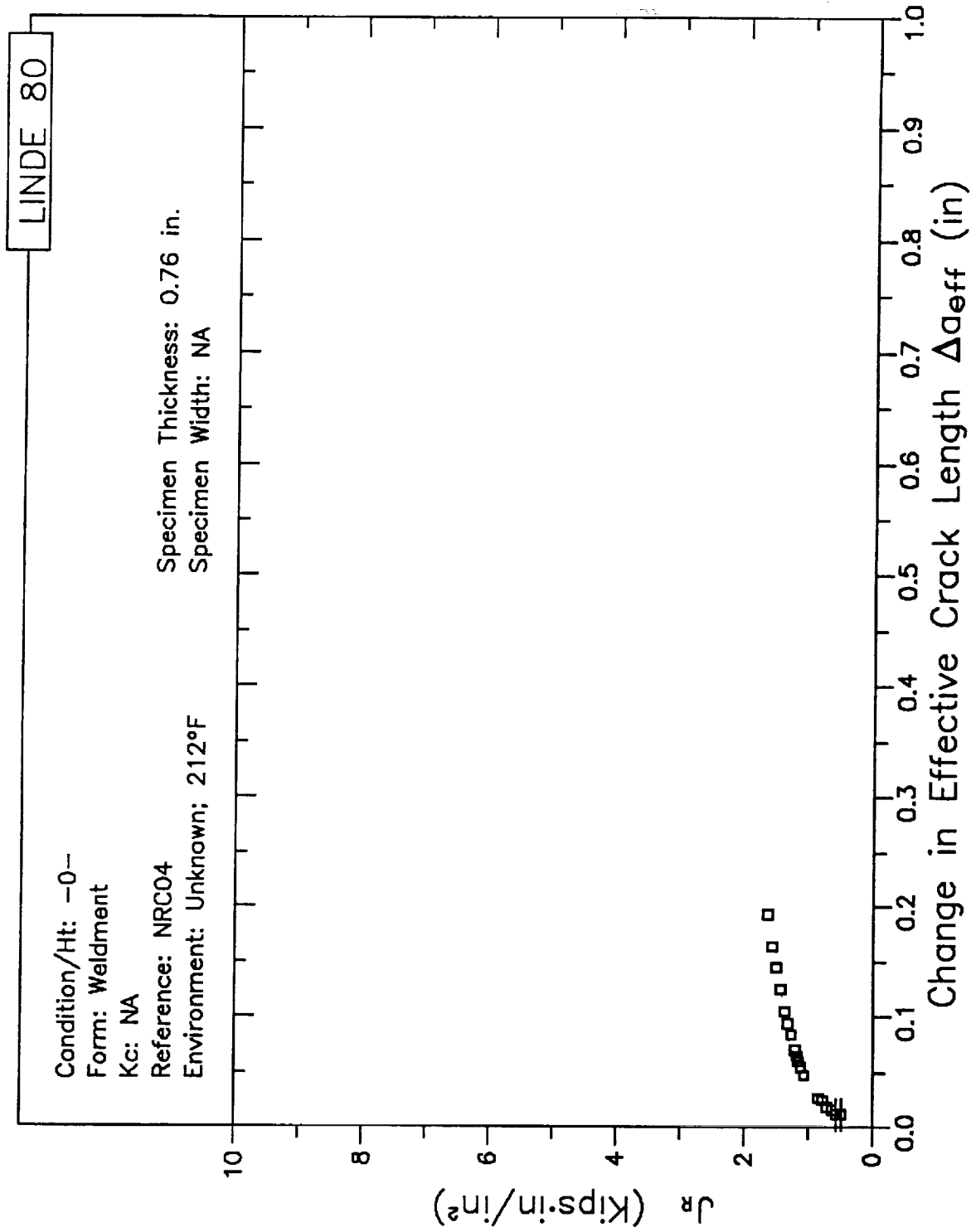
# RESISTANCE CURVE



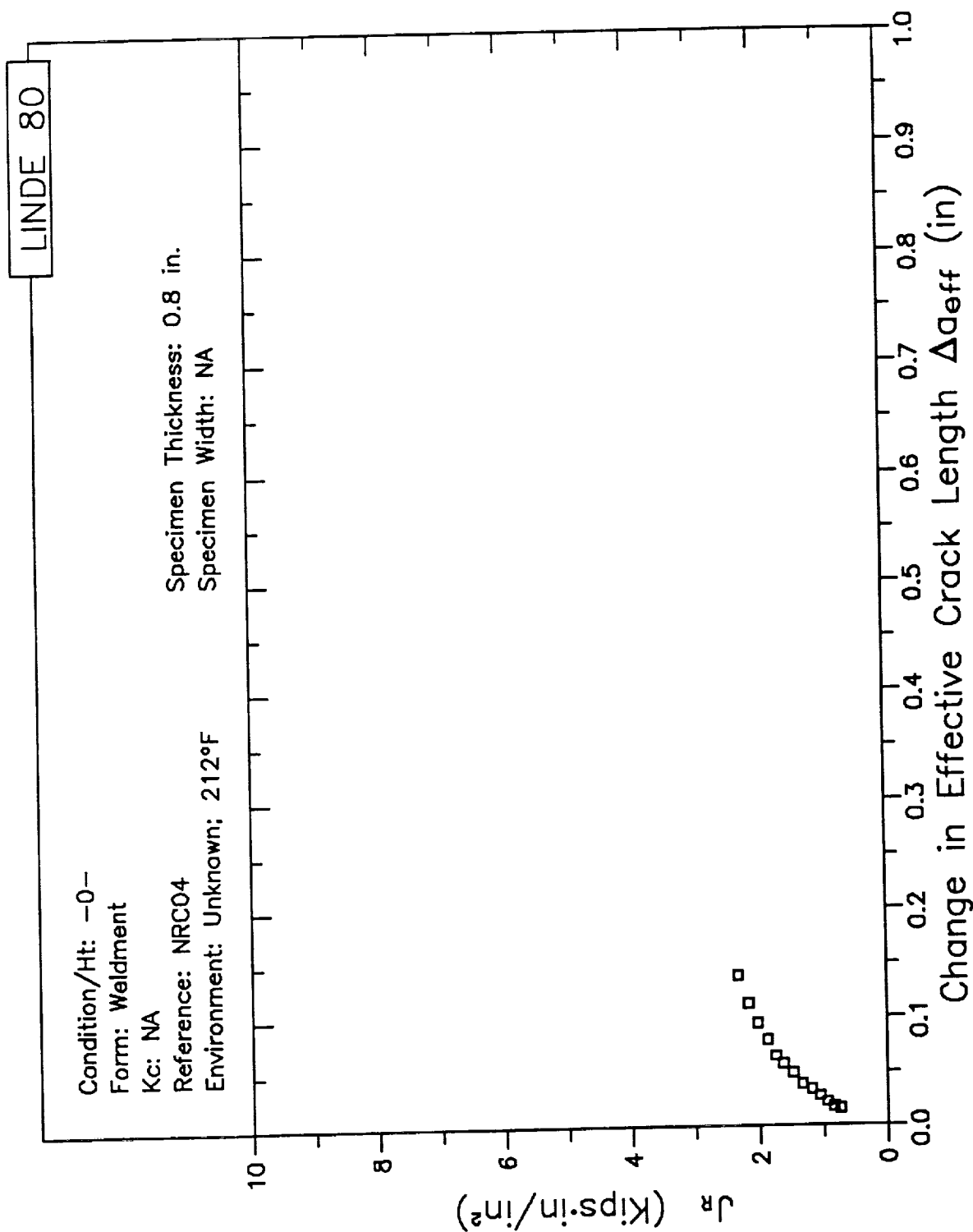
B3-240



# RESISTANCE CURVE

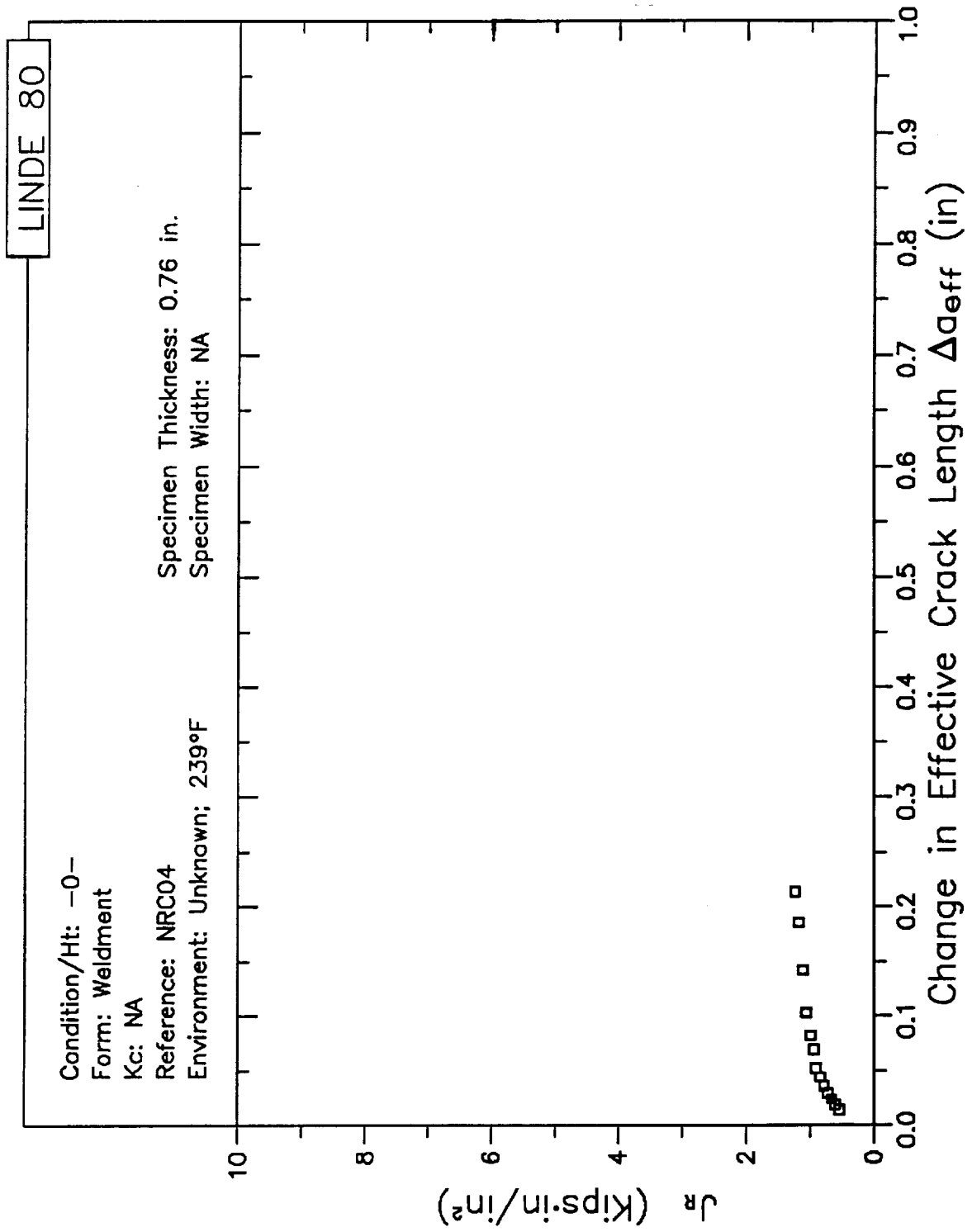


# RESISTANCE CURVE

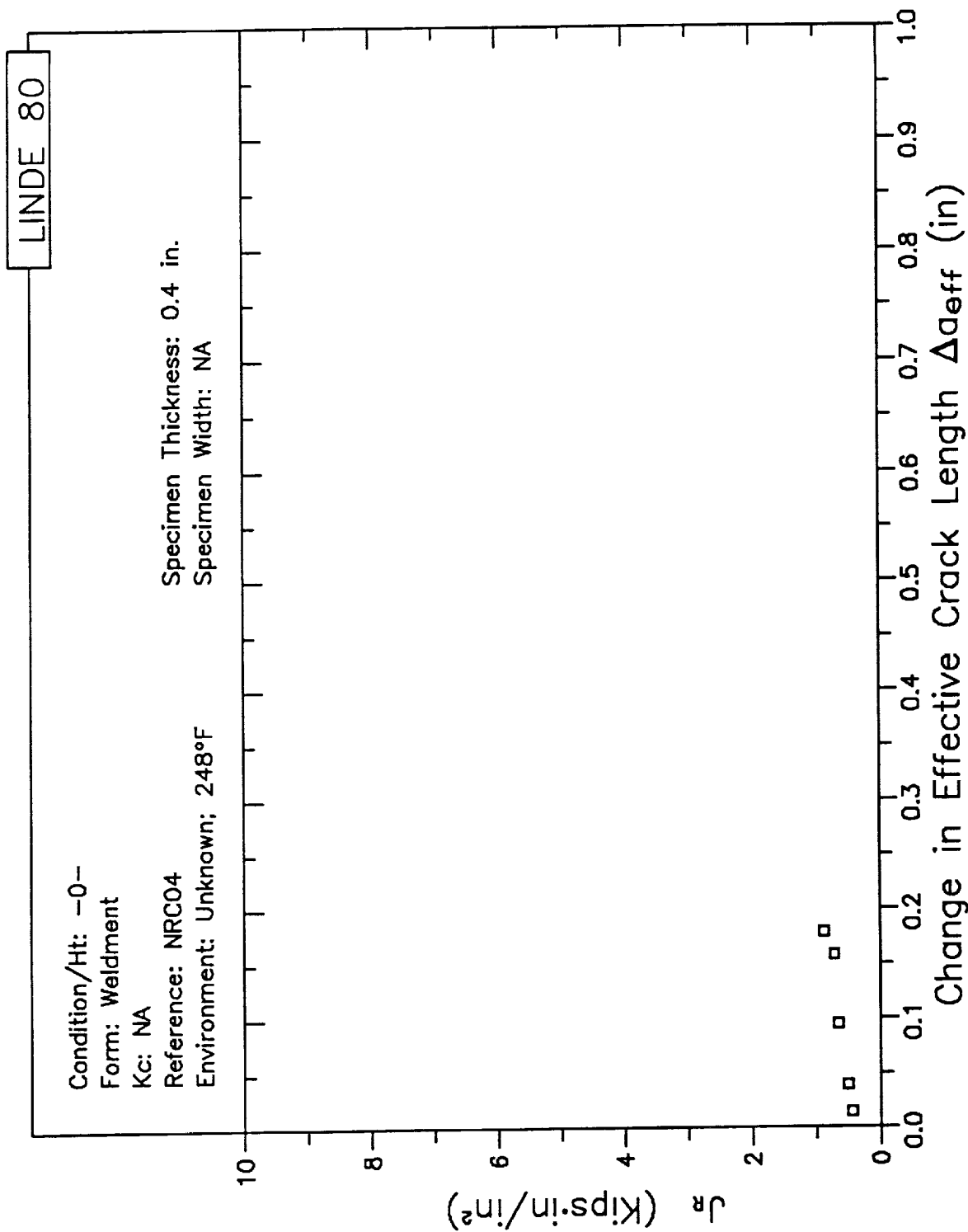


B3-242

# RESISTANCE CURVE

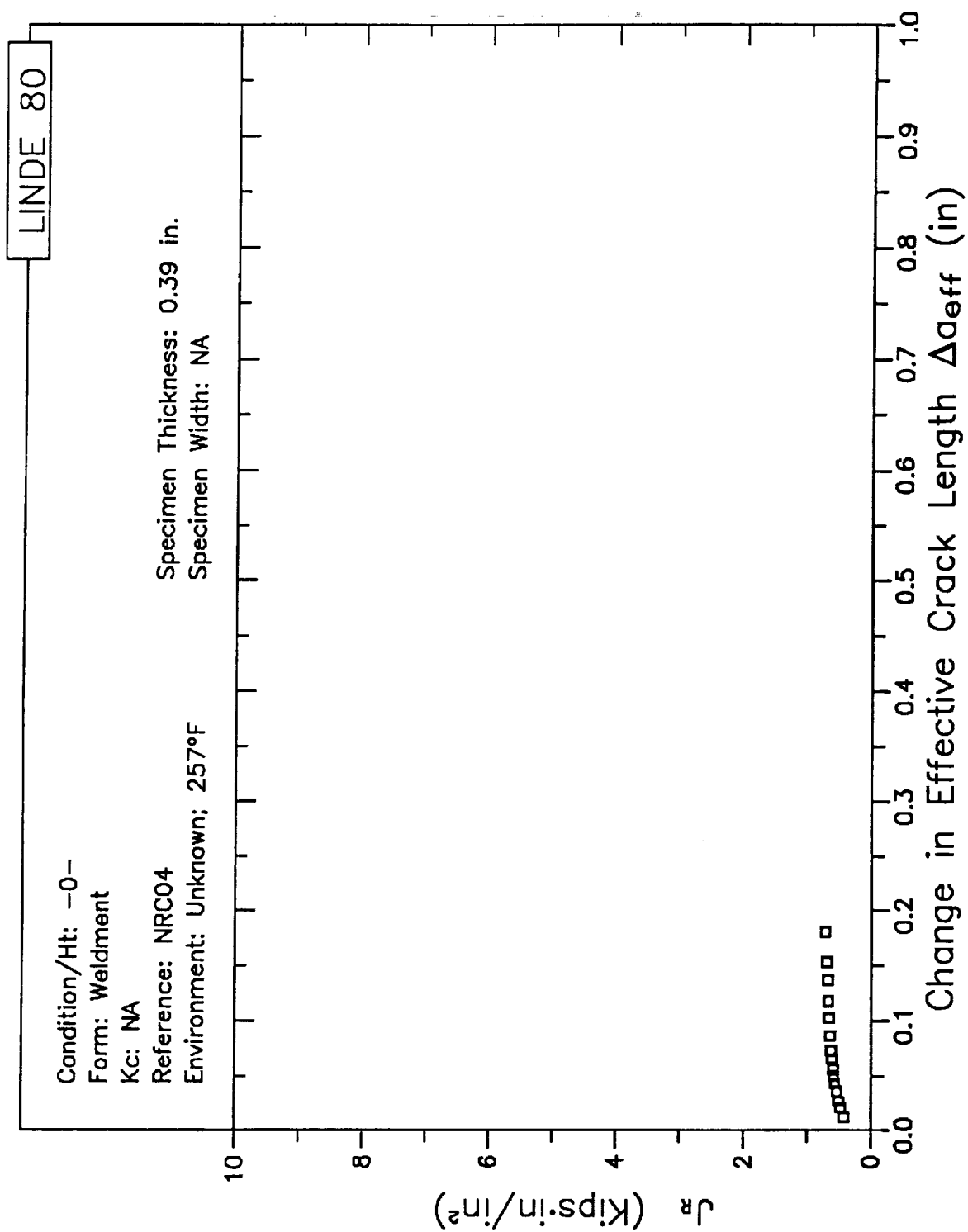


# RESISTANCE CURVE

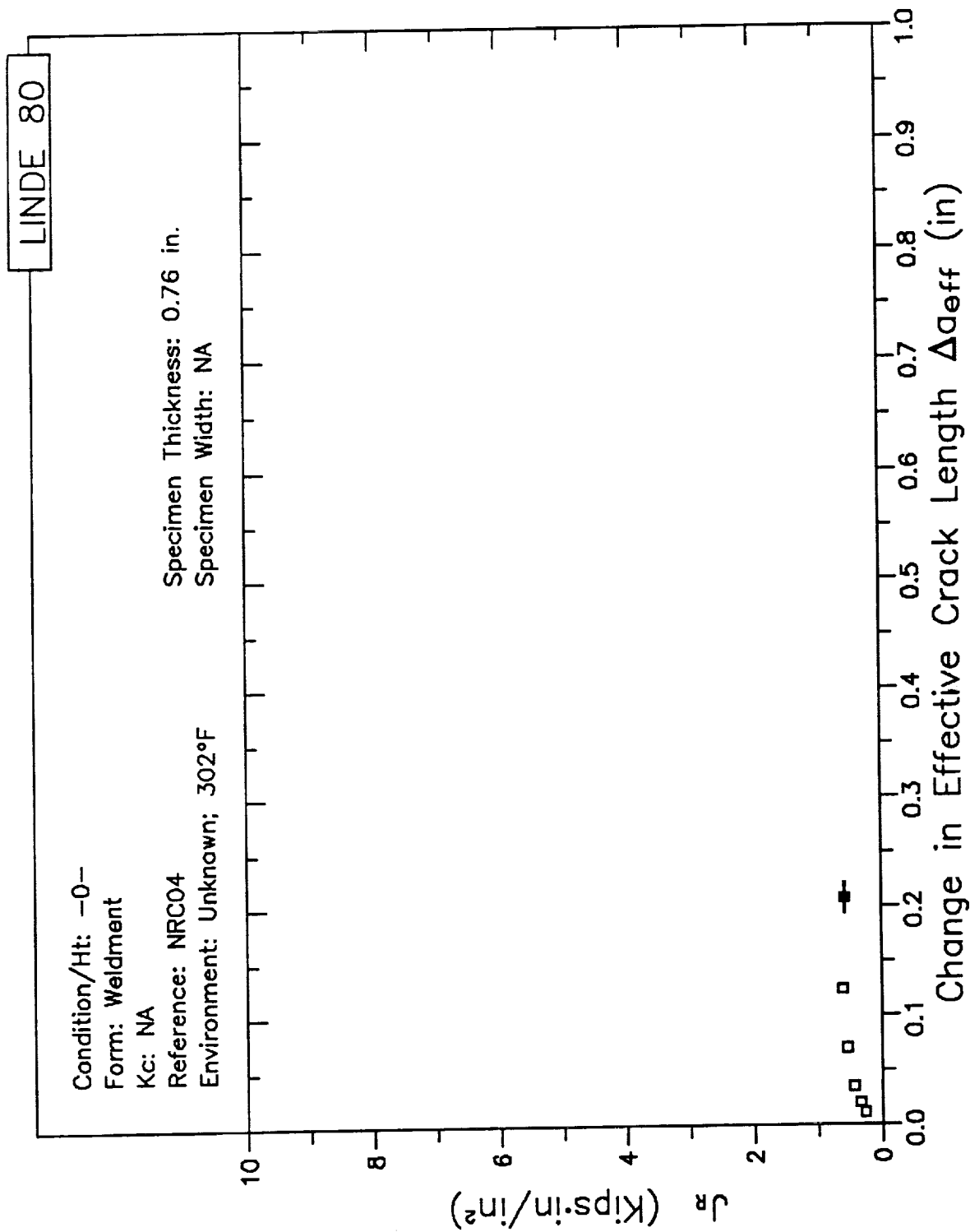


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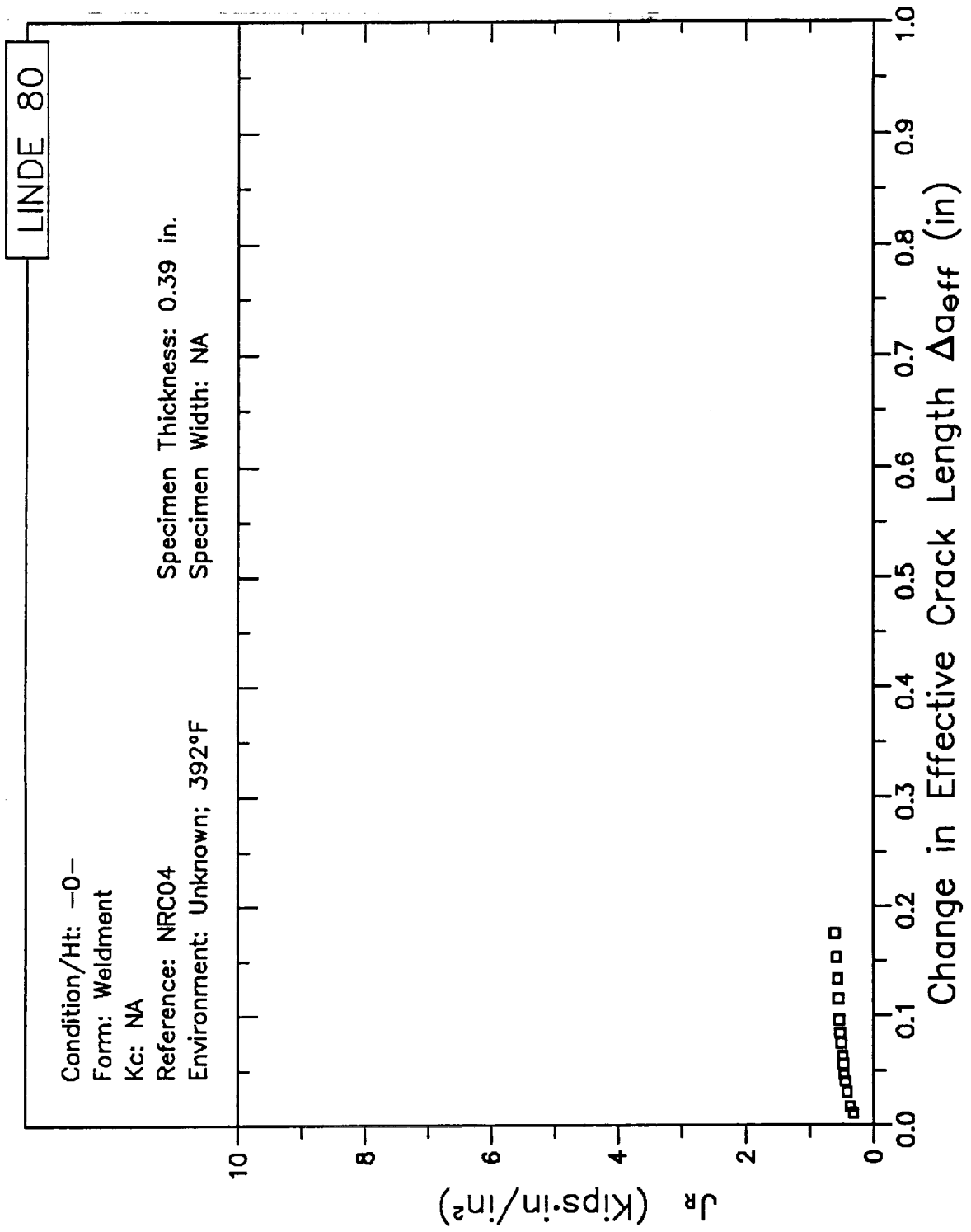
# RESISTANCE CURVE



# RESISTANCE CURVE



# RESISTANCE CURVE

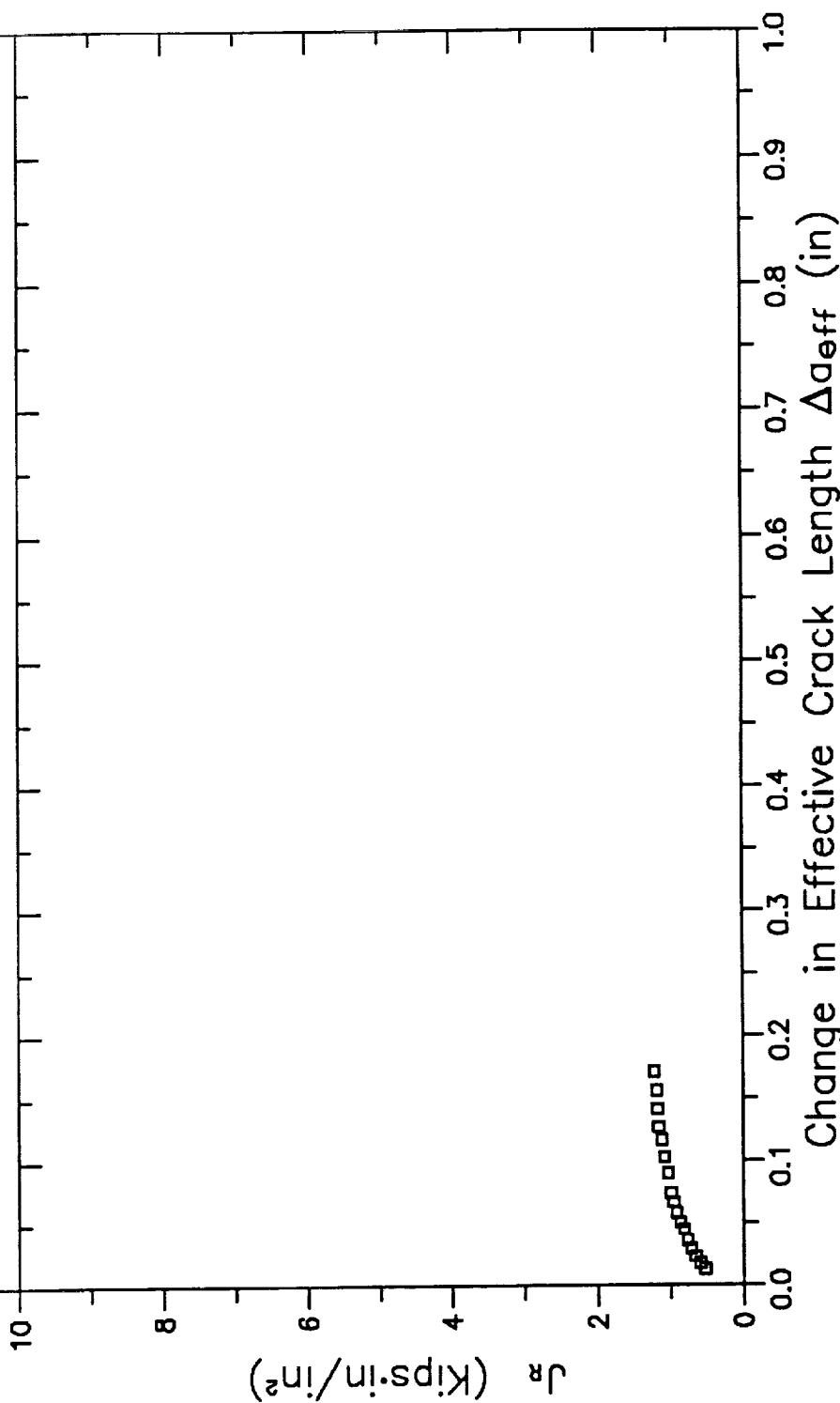


# RESISTANCE CURVE

LINDE 80

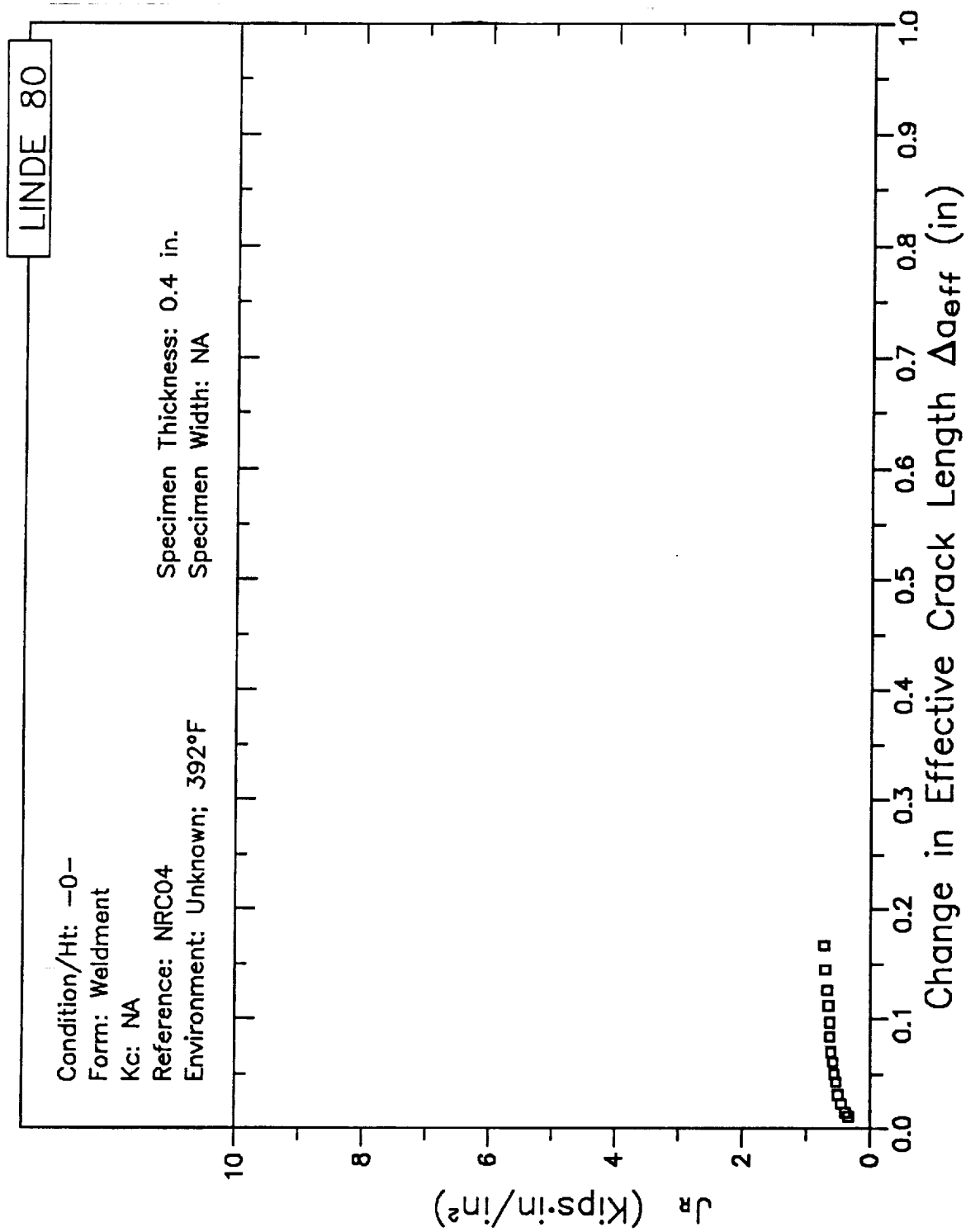
Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 392°F

Specimen Thickness: 0.4 in.  
Specimen Width: NA

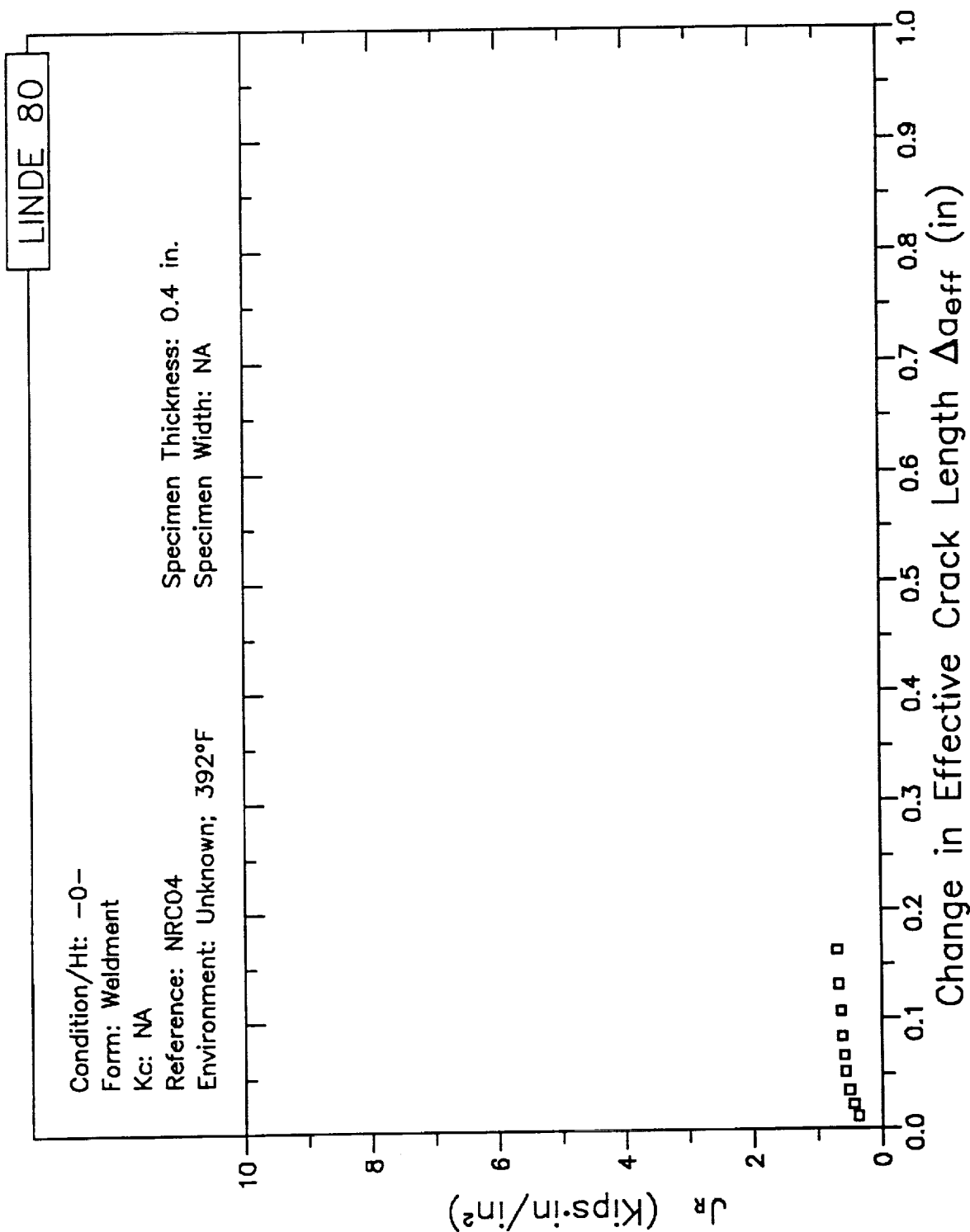




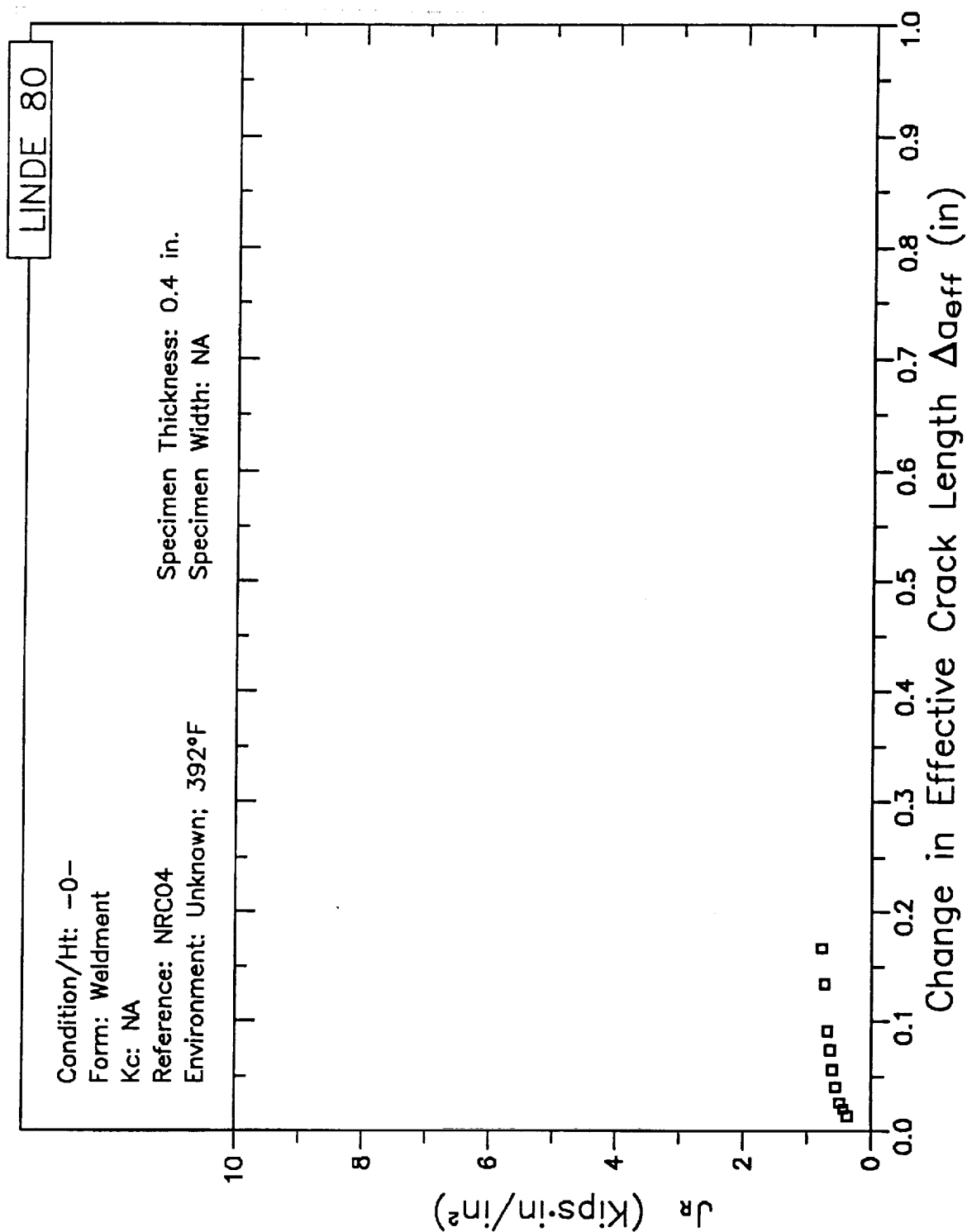
# RESISTANCE CURVE



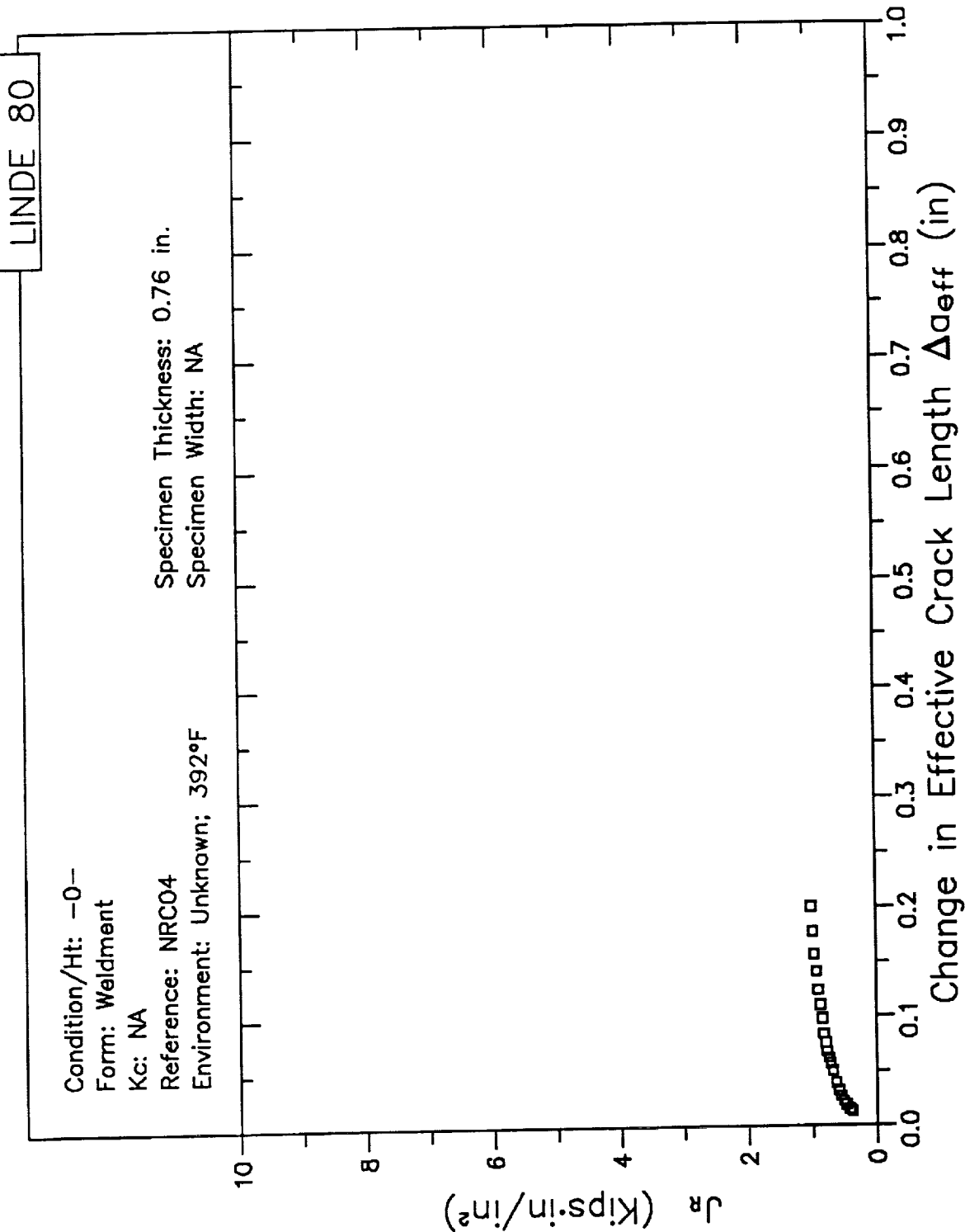
# RESISTANCE CURVE



# RESISTANCE CURVE

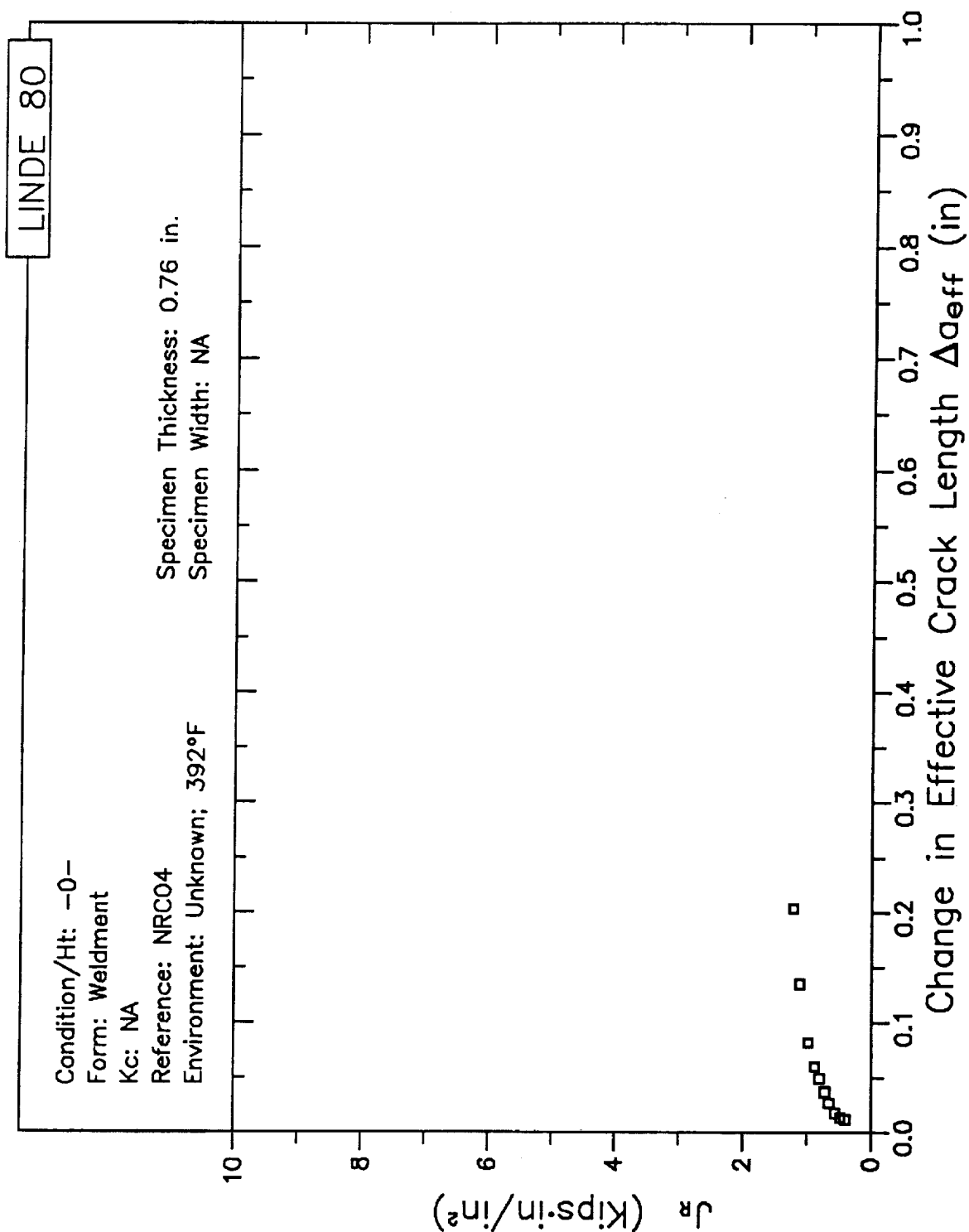


# RESISTANCE CURVE

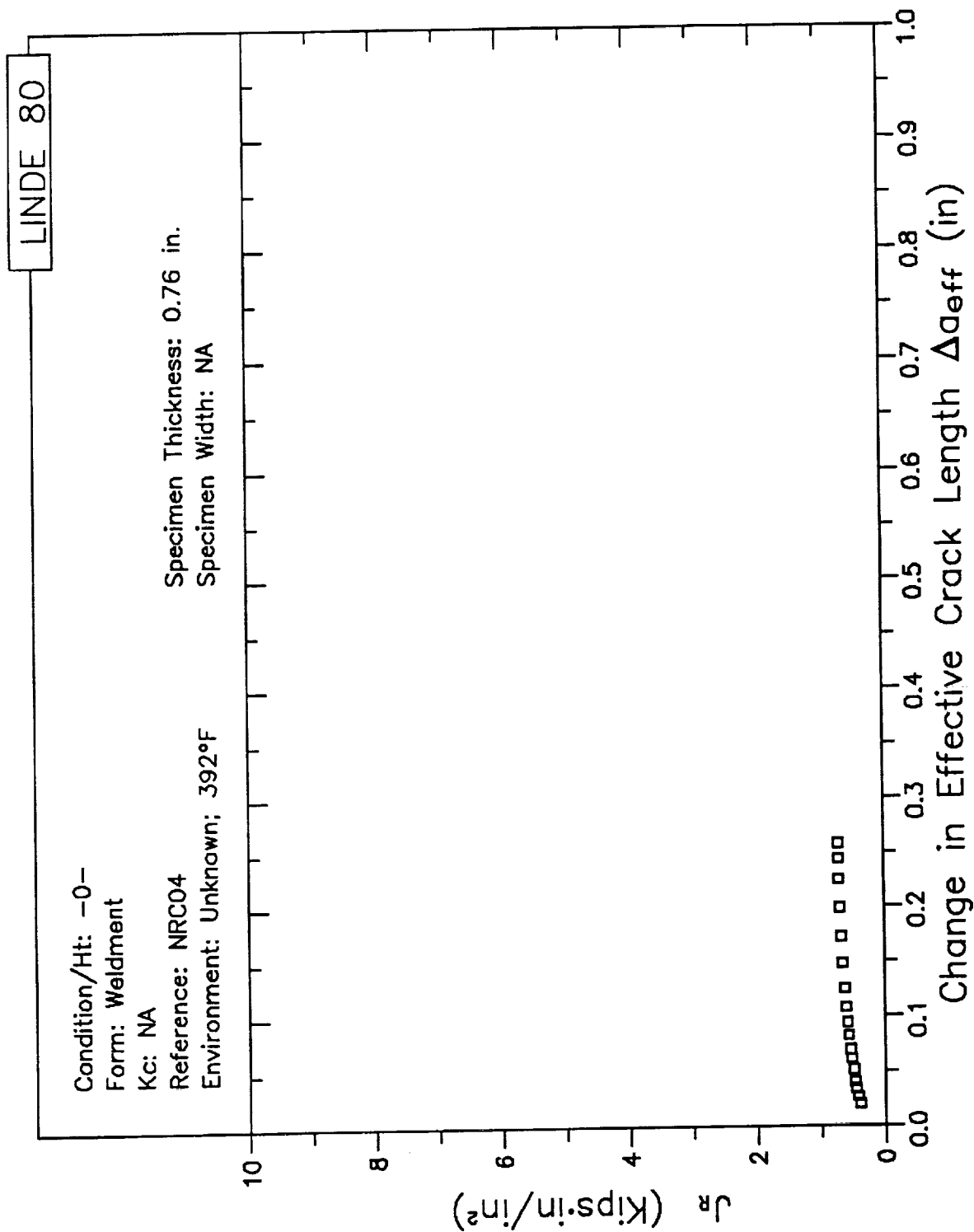


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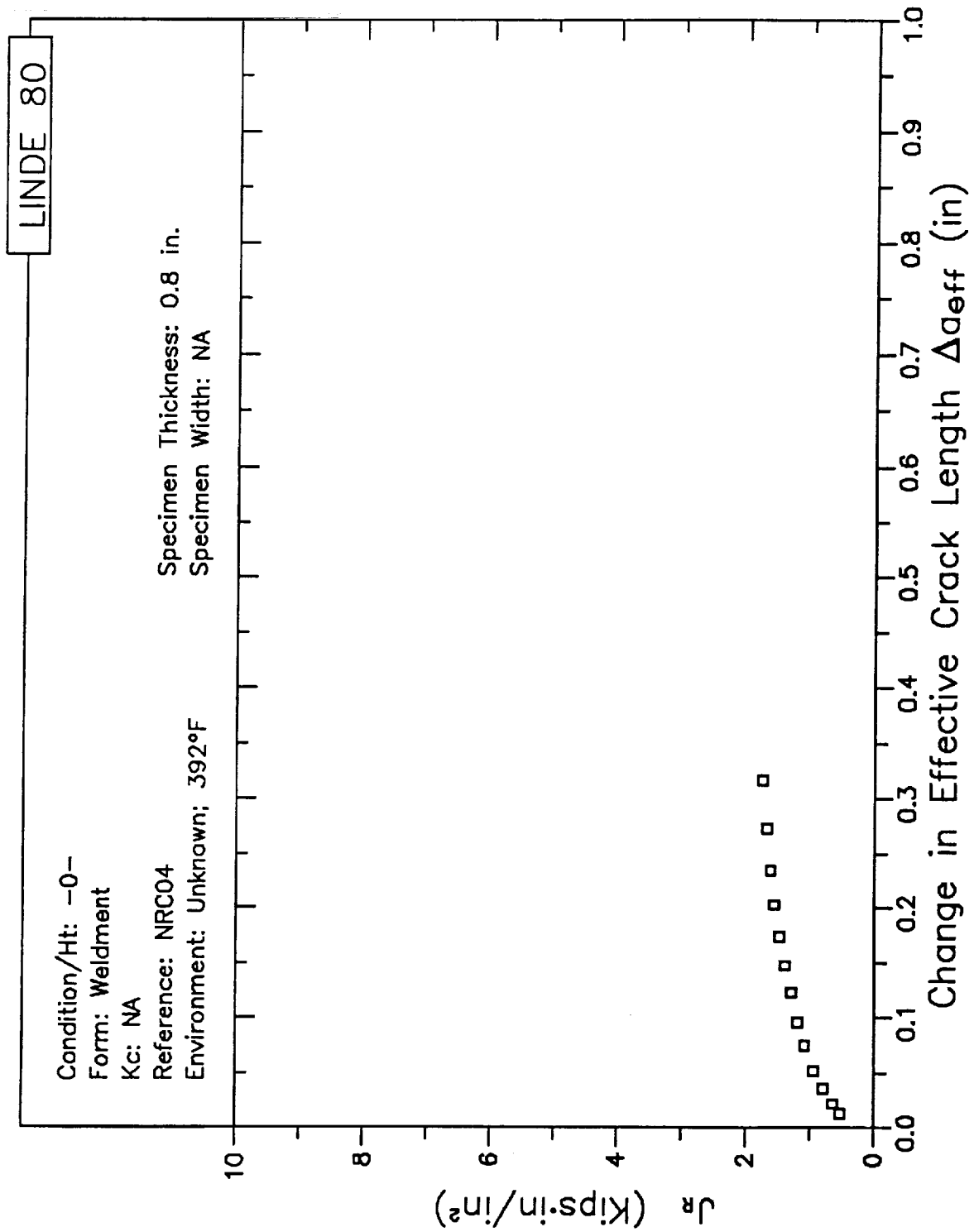
# RESISTANCE CURVE



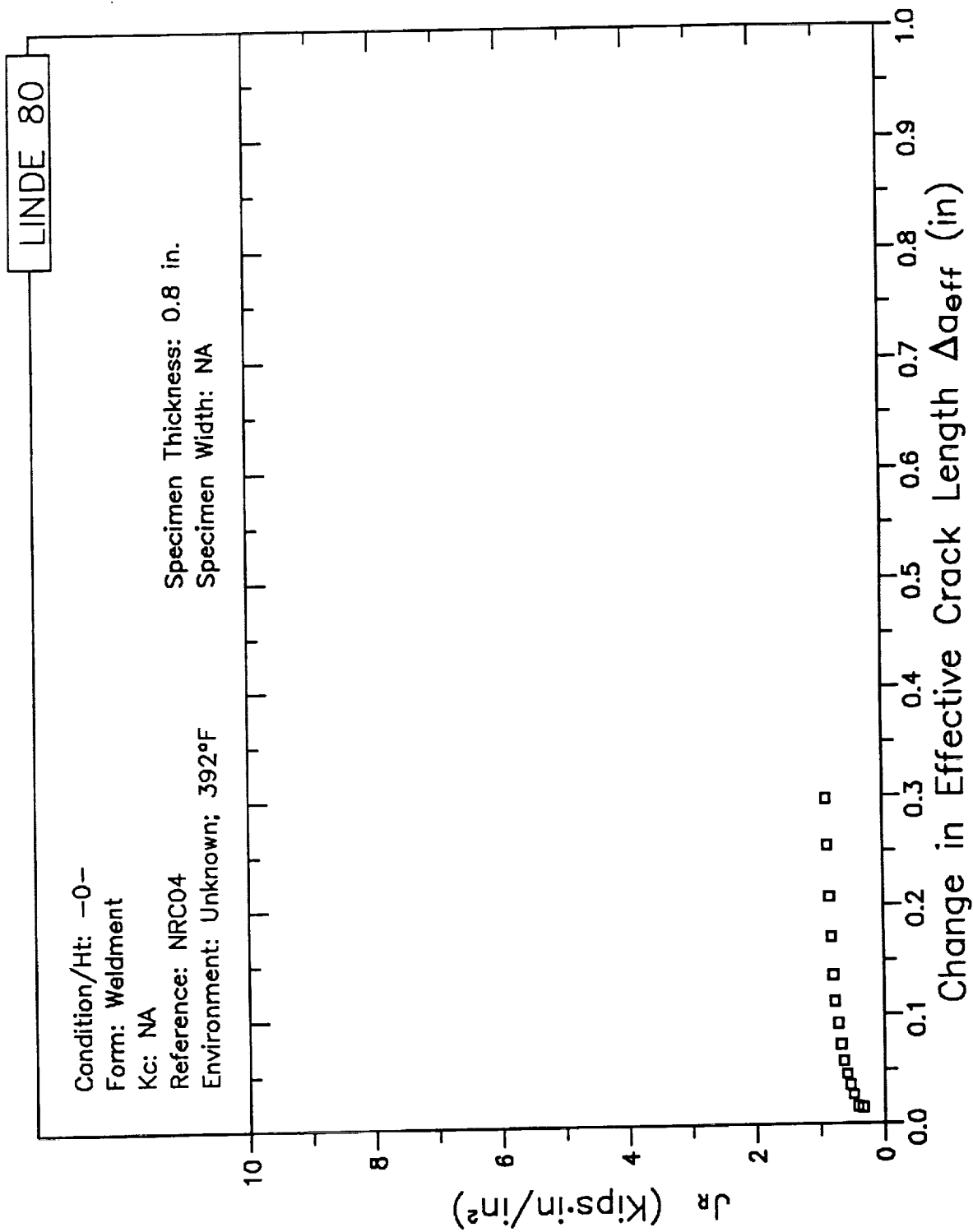
# RESISTANCE CURVE



# RESISTANCE CURVE

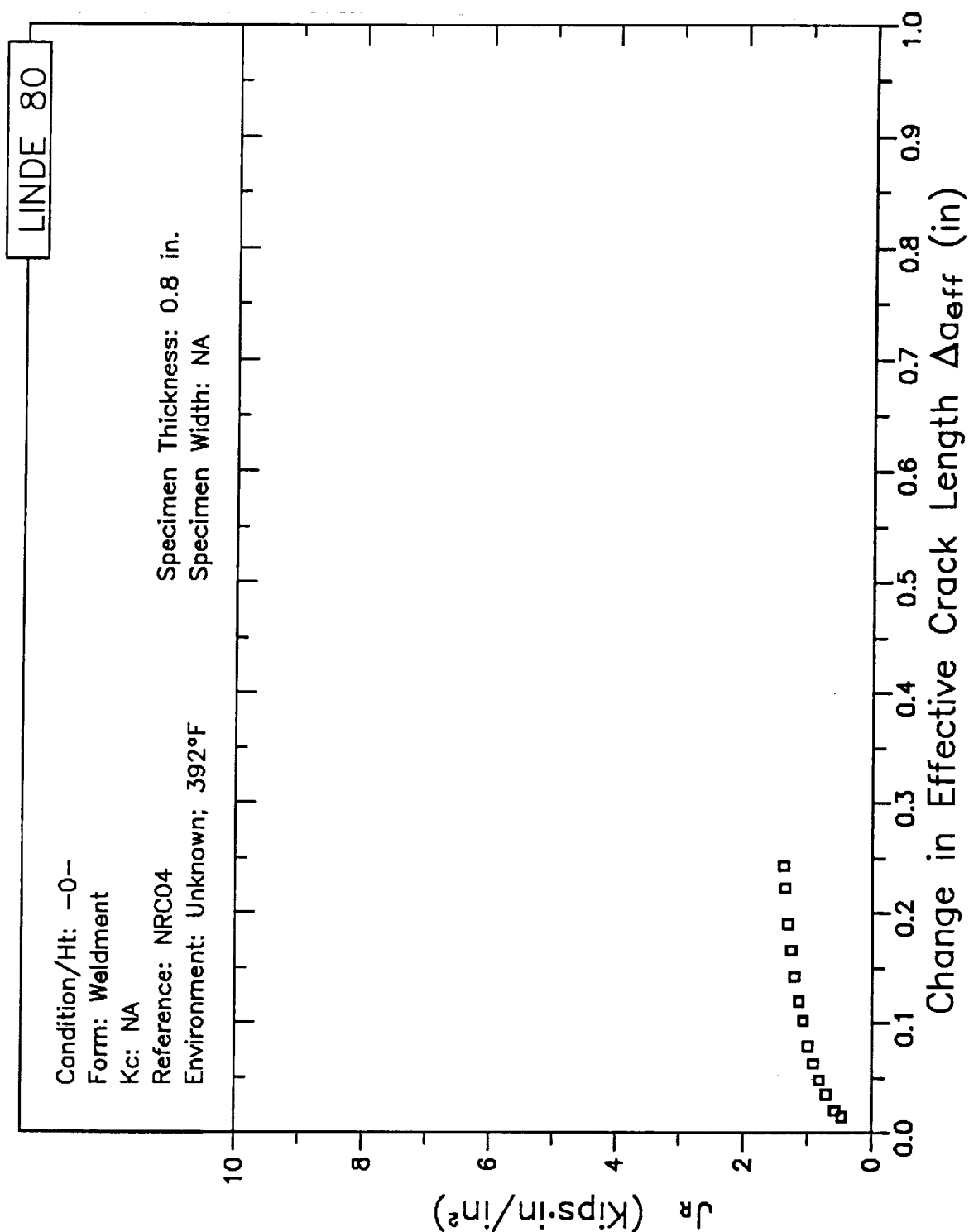


# RESISTANCE CURVE

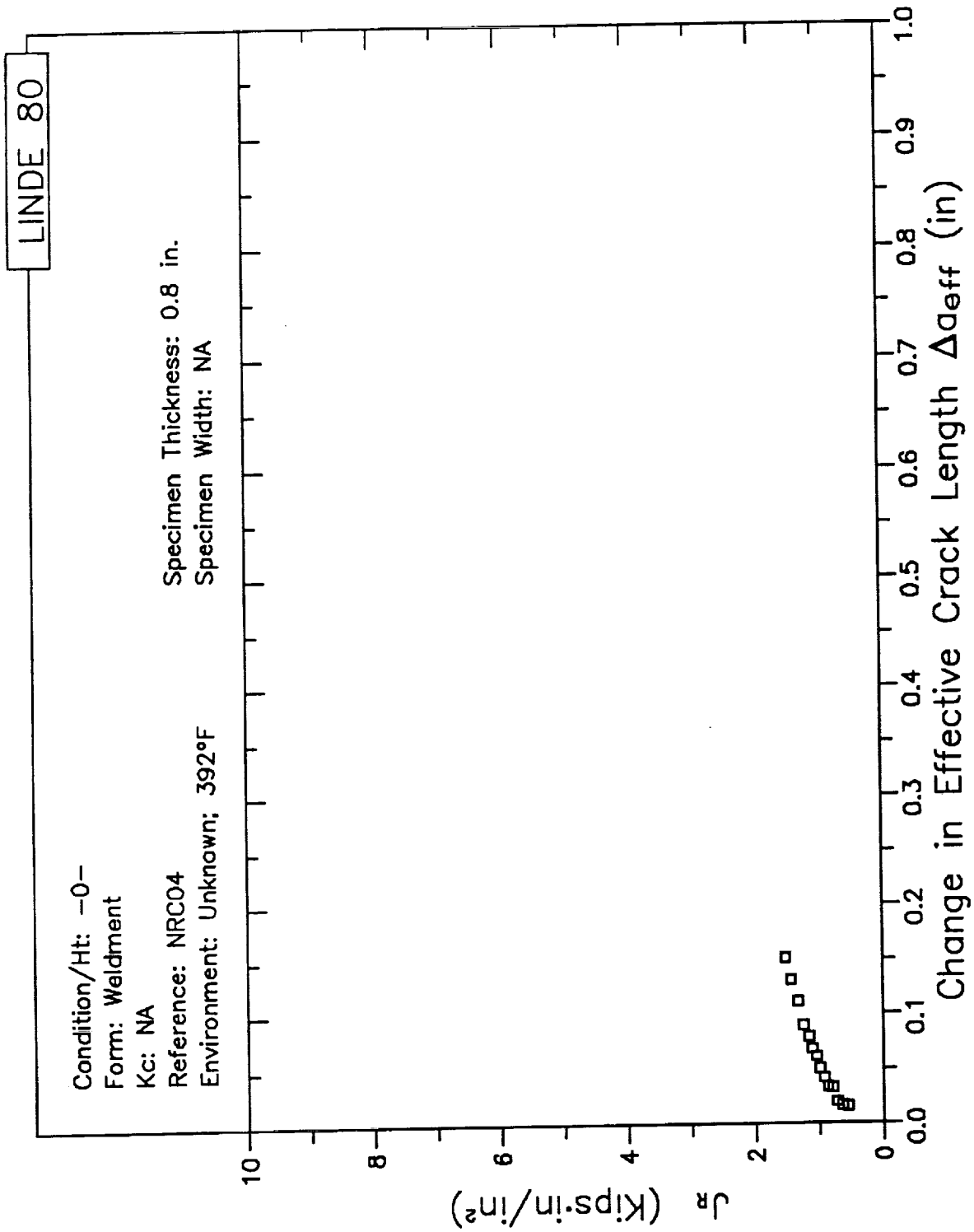




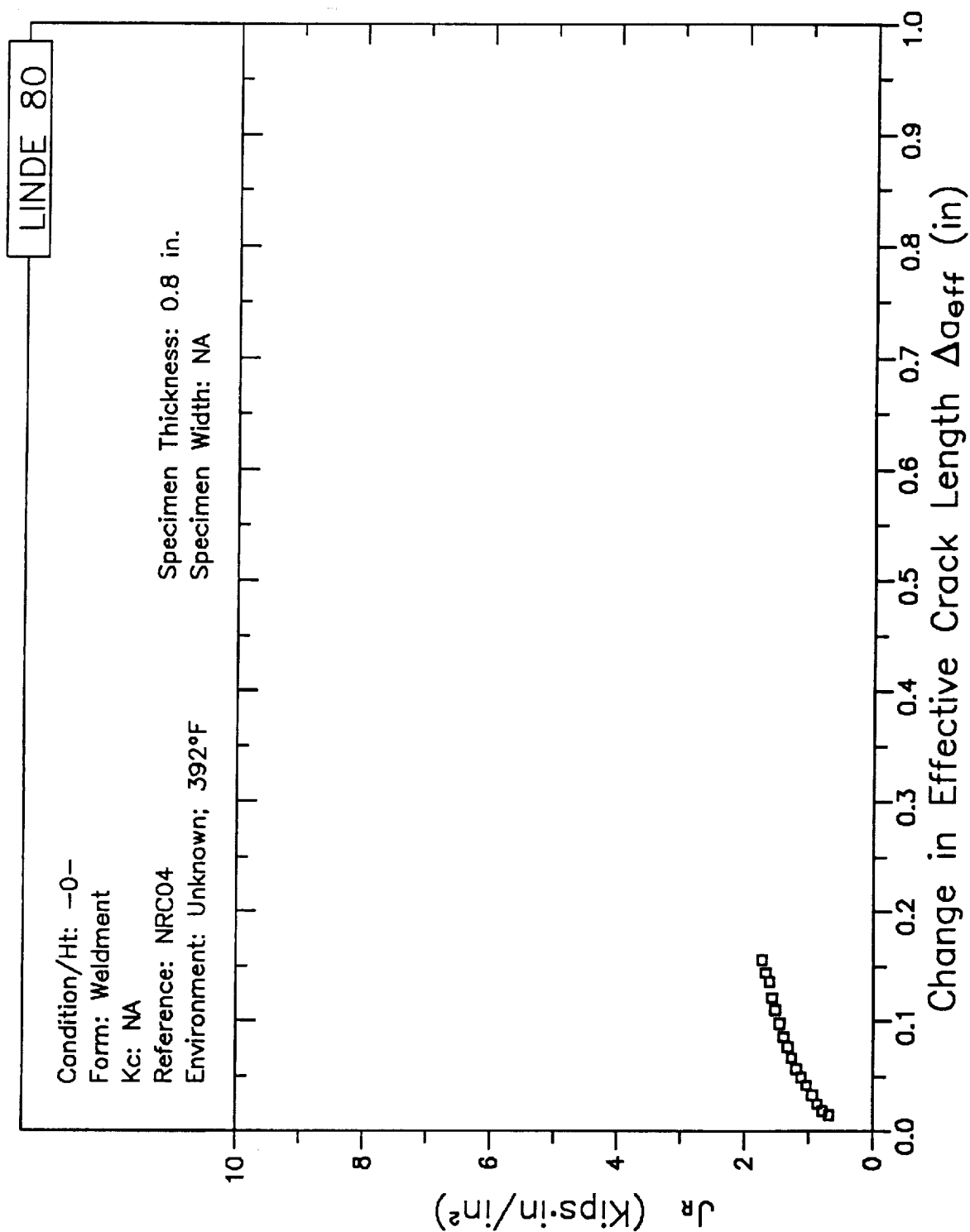
# RESISTANCE CURVE



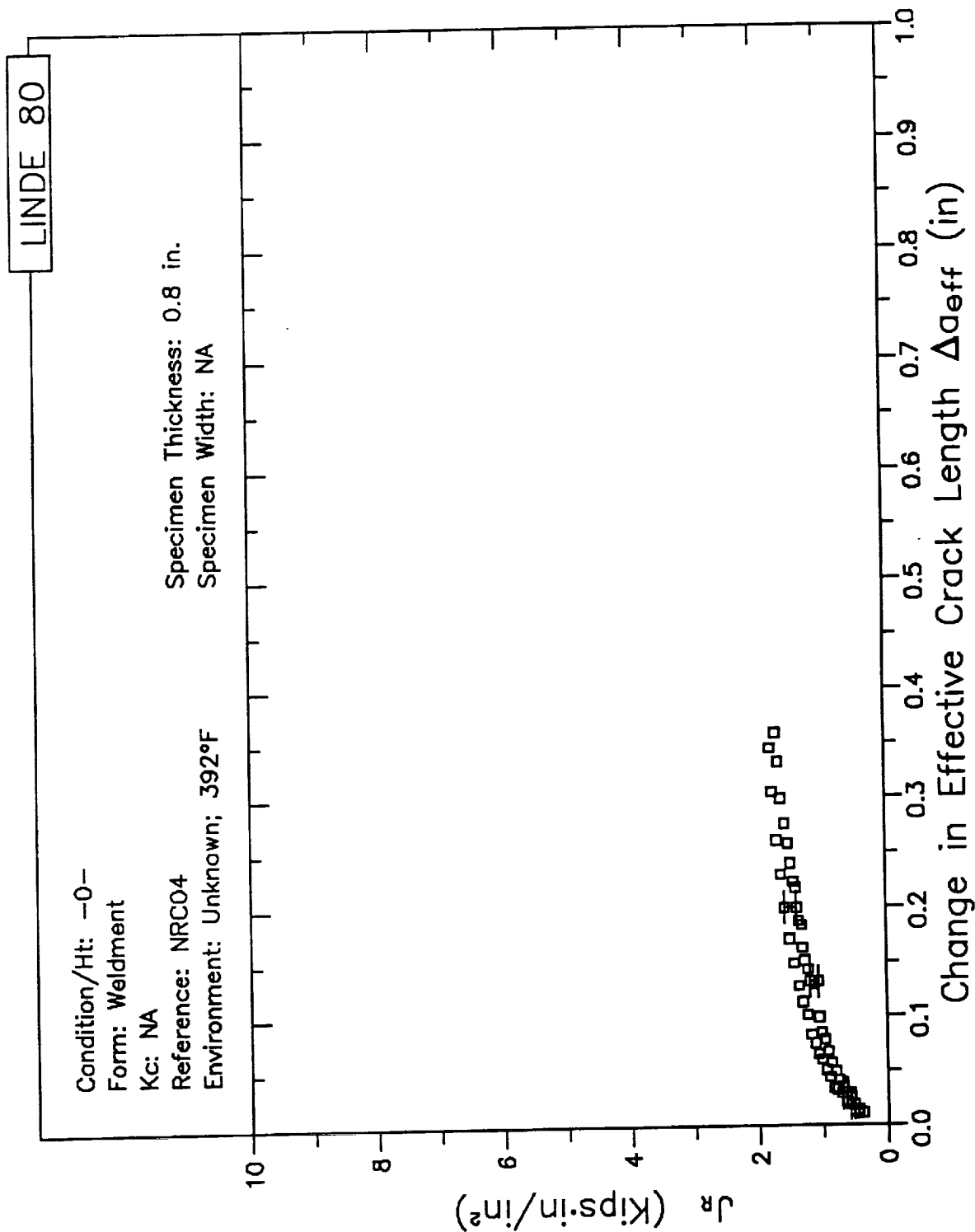
# RESISTANCE CURVE



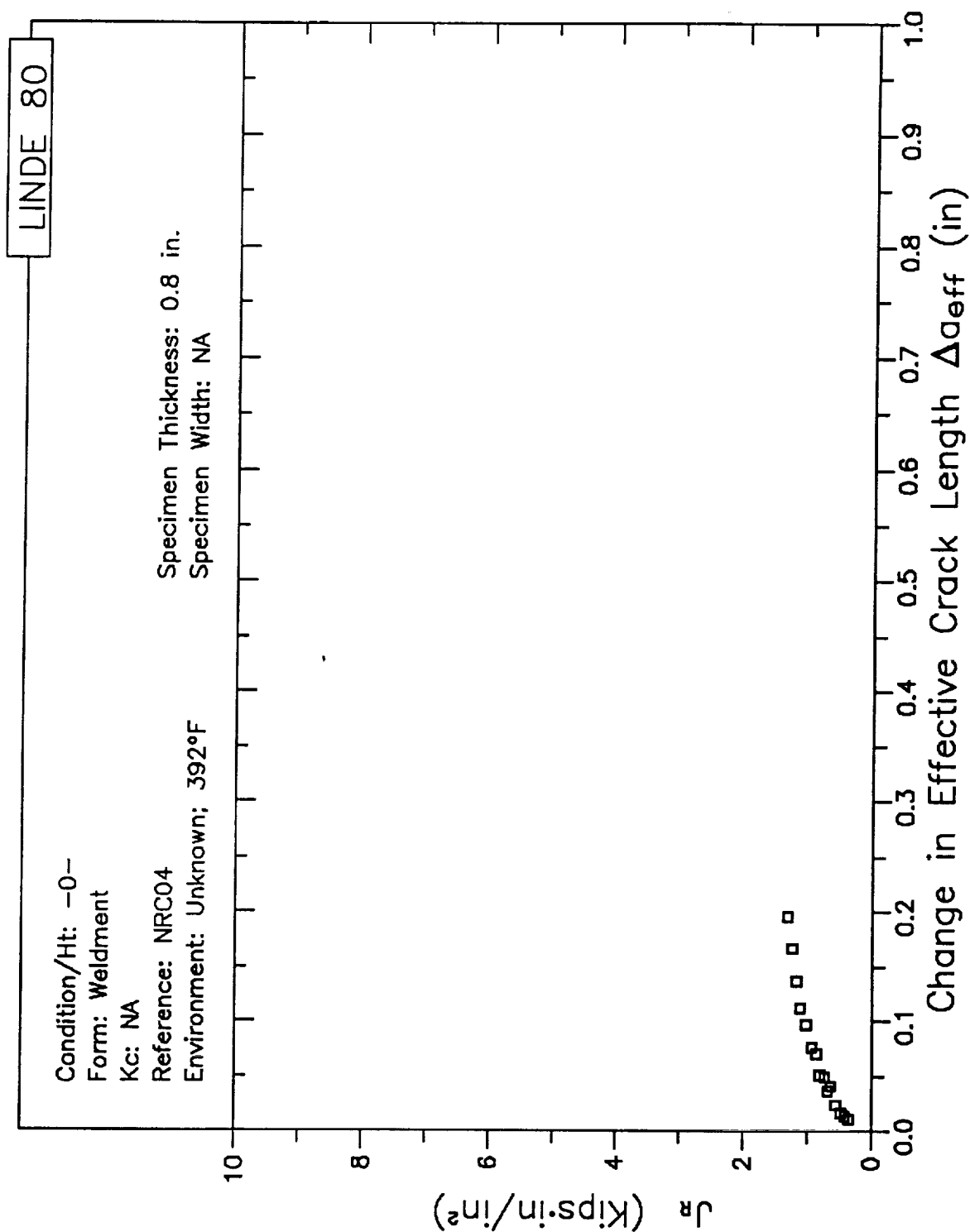
# RESISTANCE CURVE



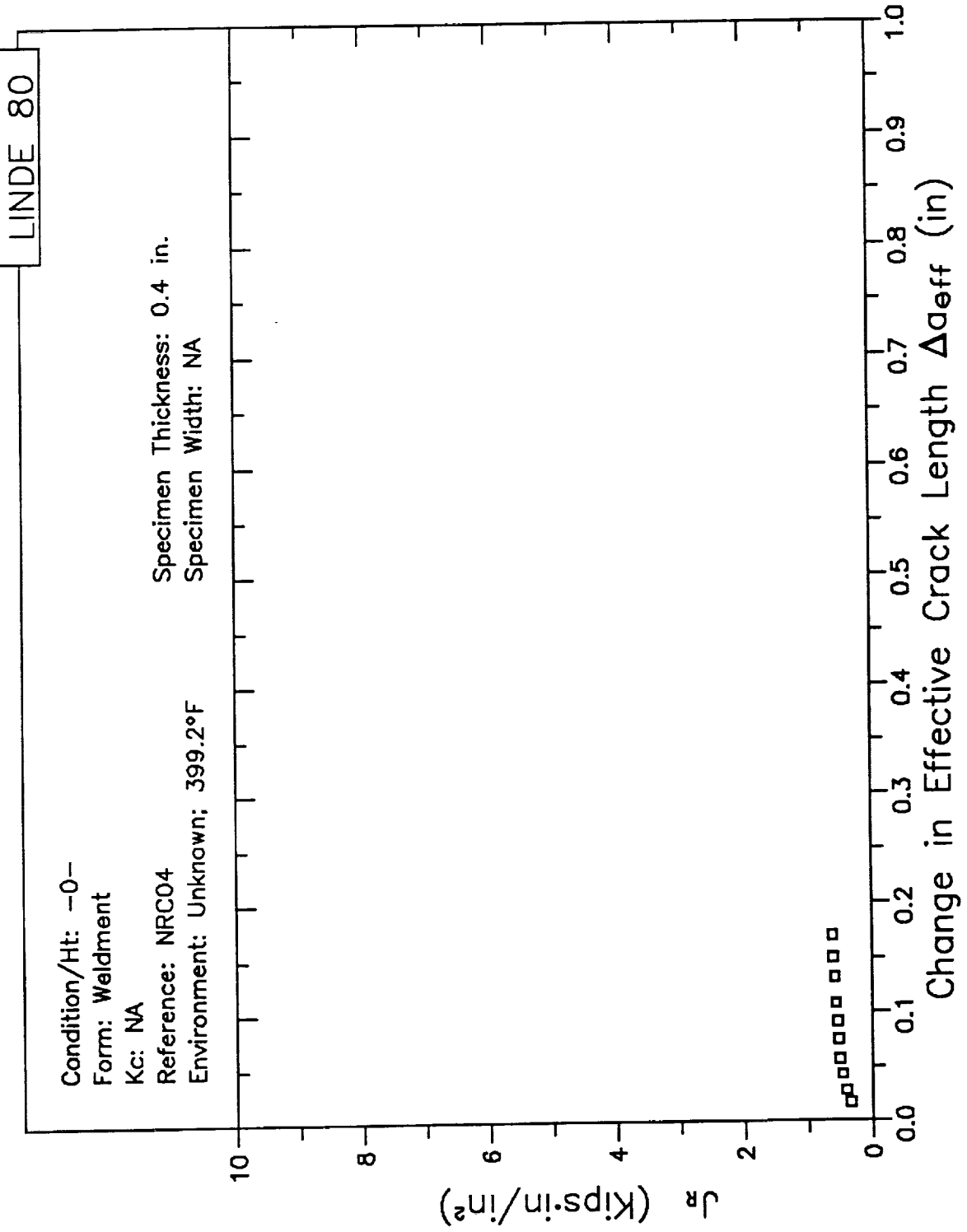
# RESISTANCE CURVE



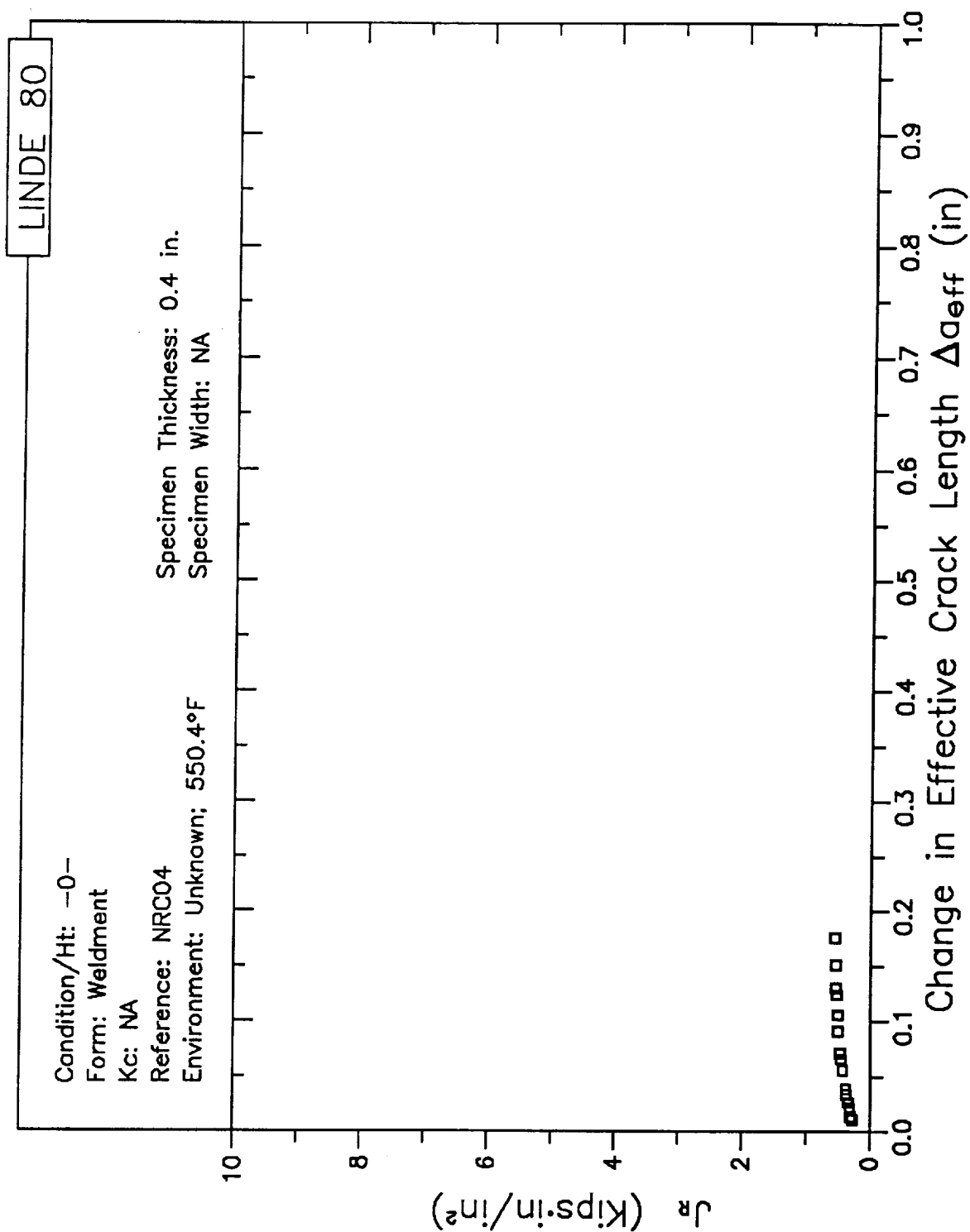
# RESISTANCE CURVE



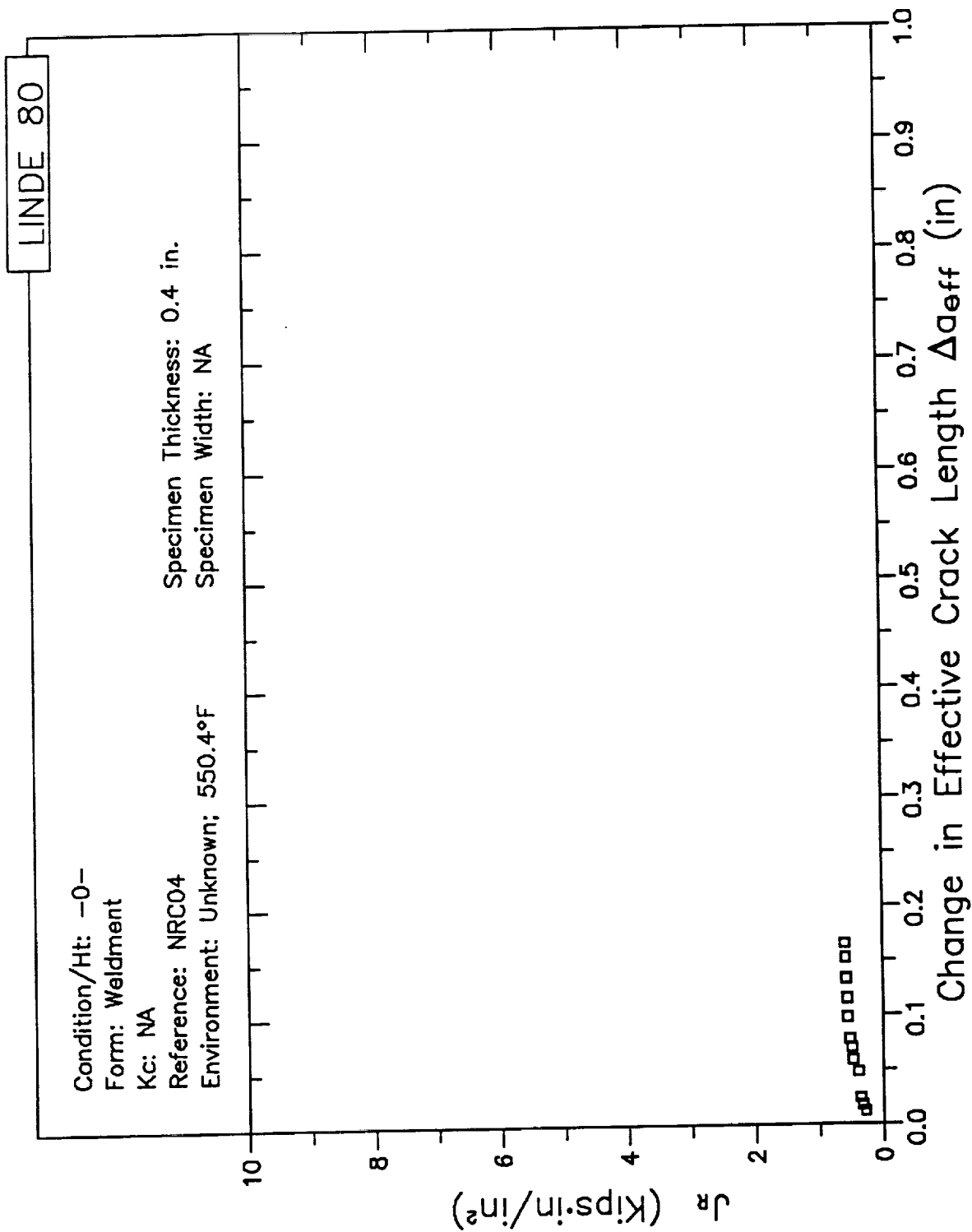
# RESISTANCE CURVE



# RESISTANCE CURVE

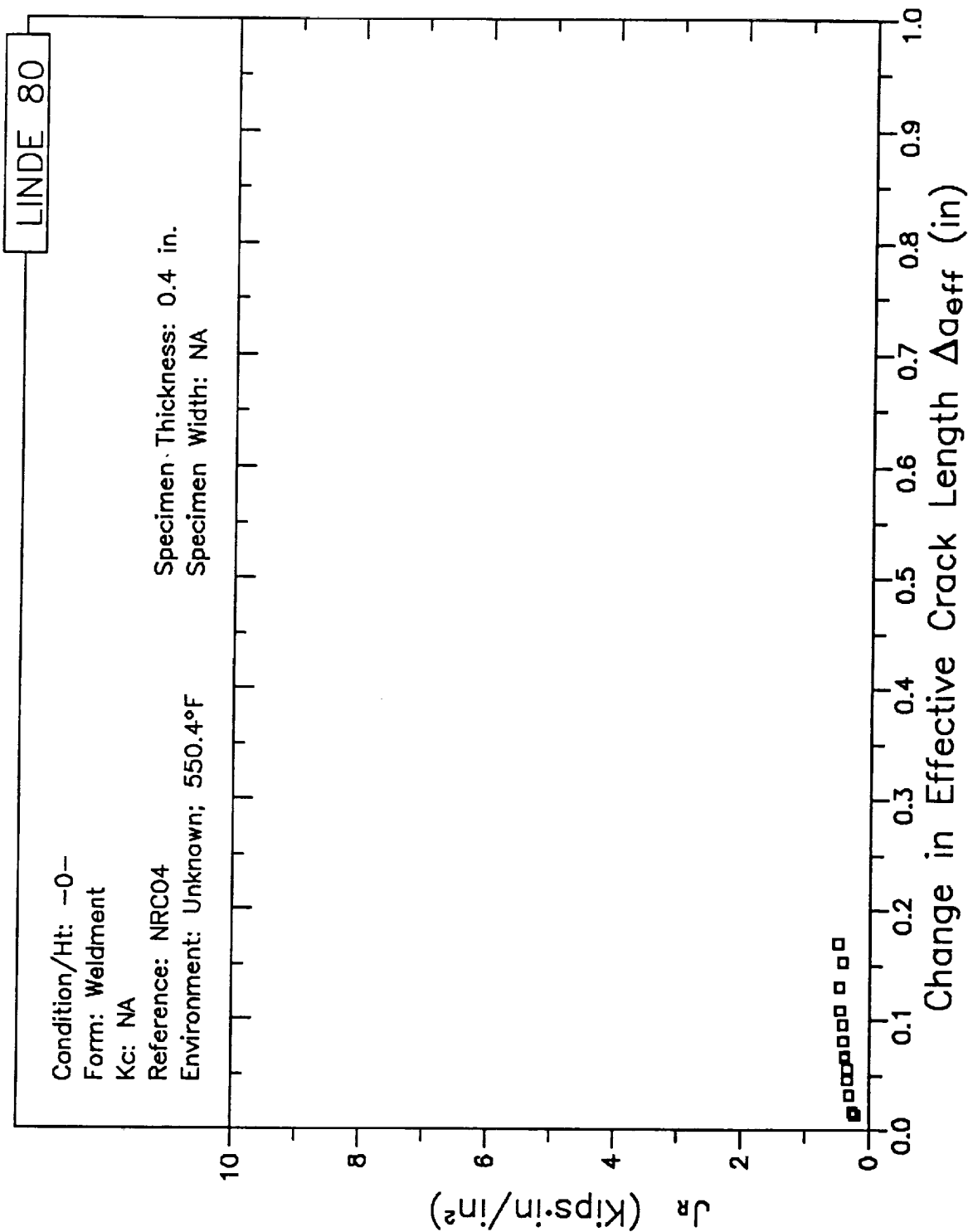


# RESISTANCE CURVE

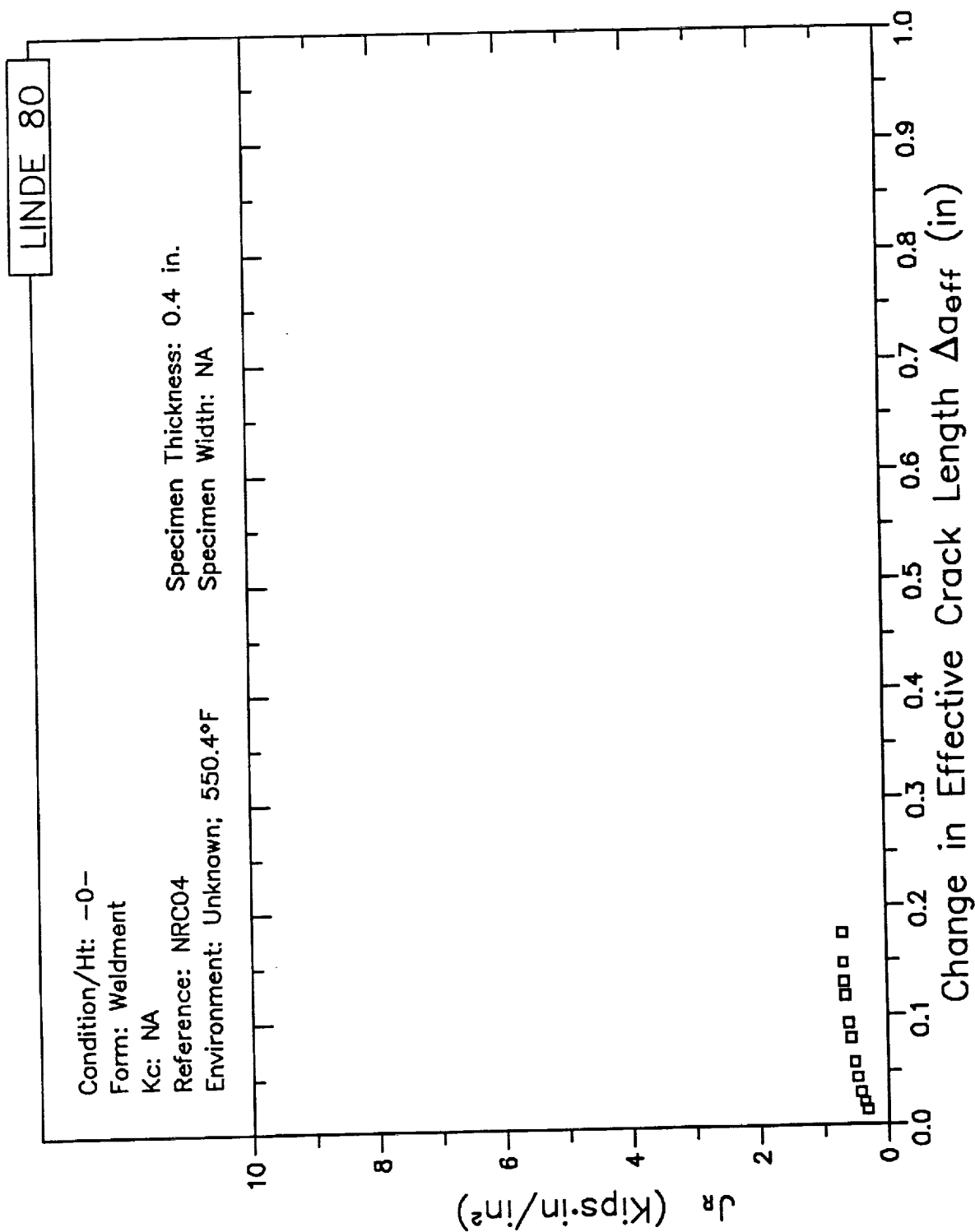




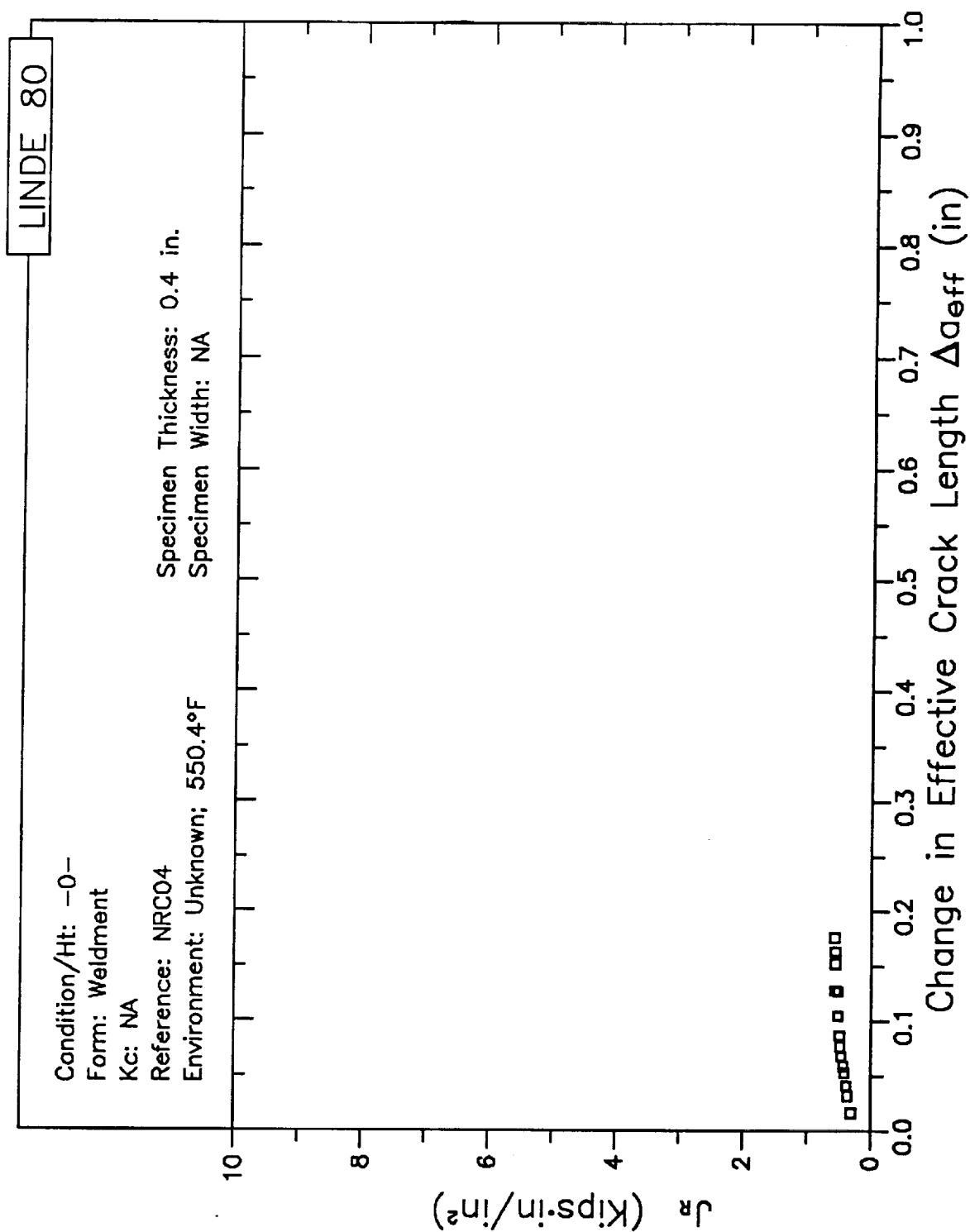
# RESISTANCE CURVE



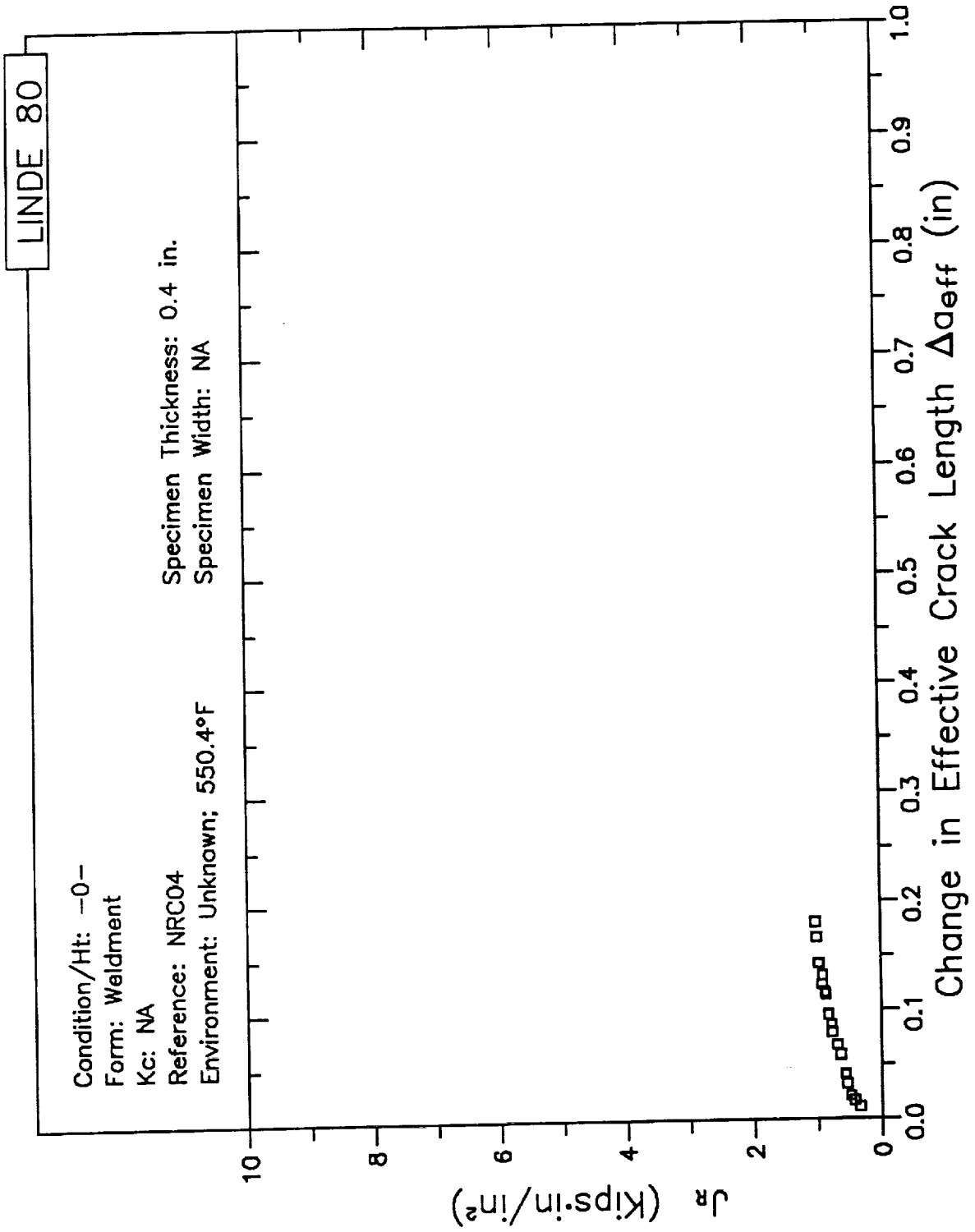
# RESISTANCE CURVE



# RESISTANCE CURVE

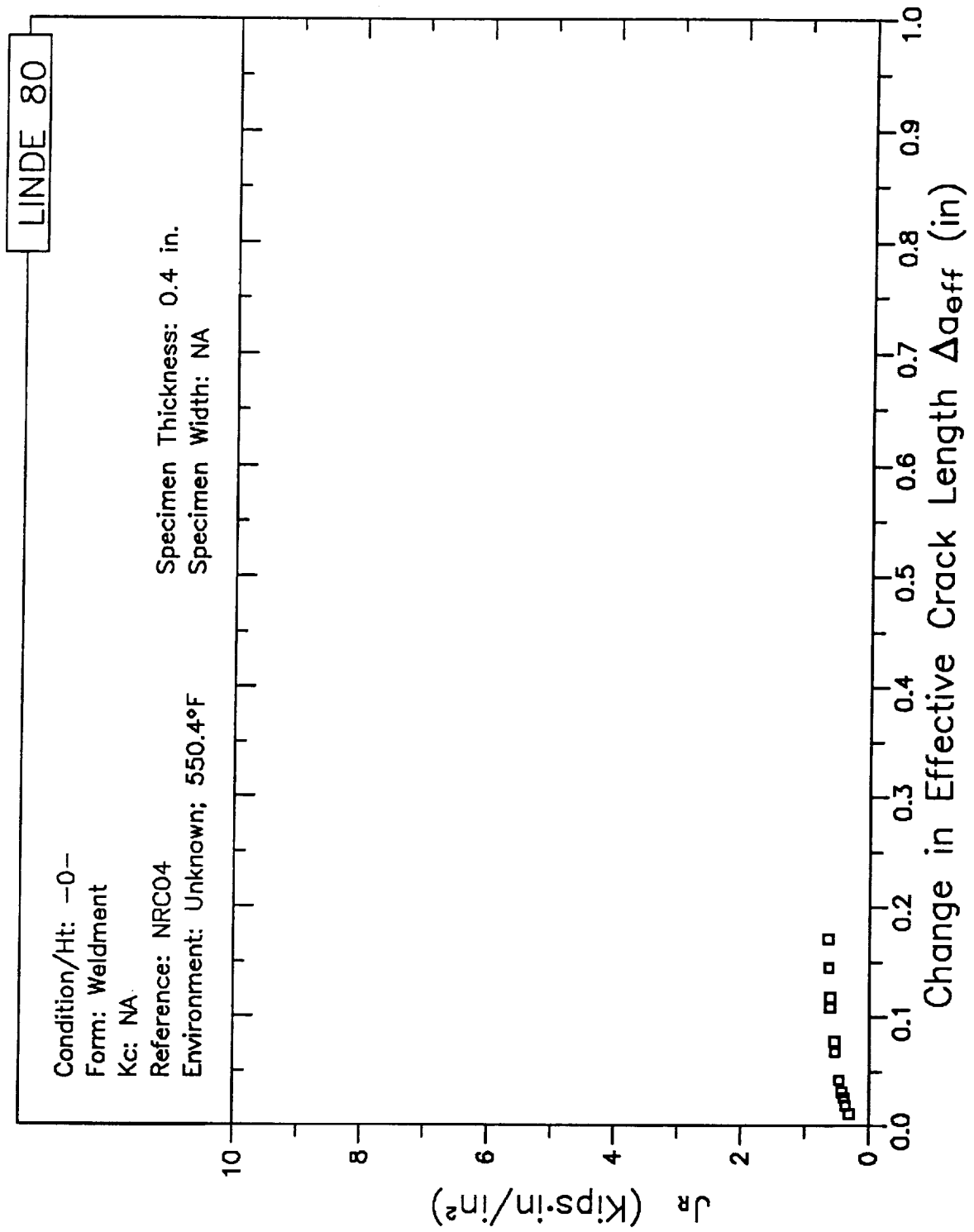


# RESISTANCE CURVE

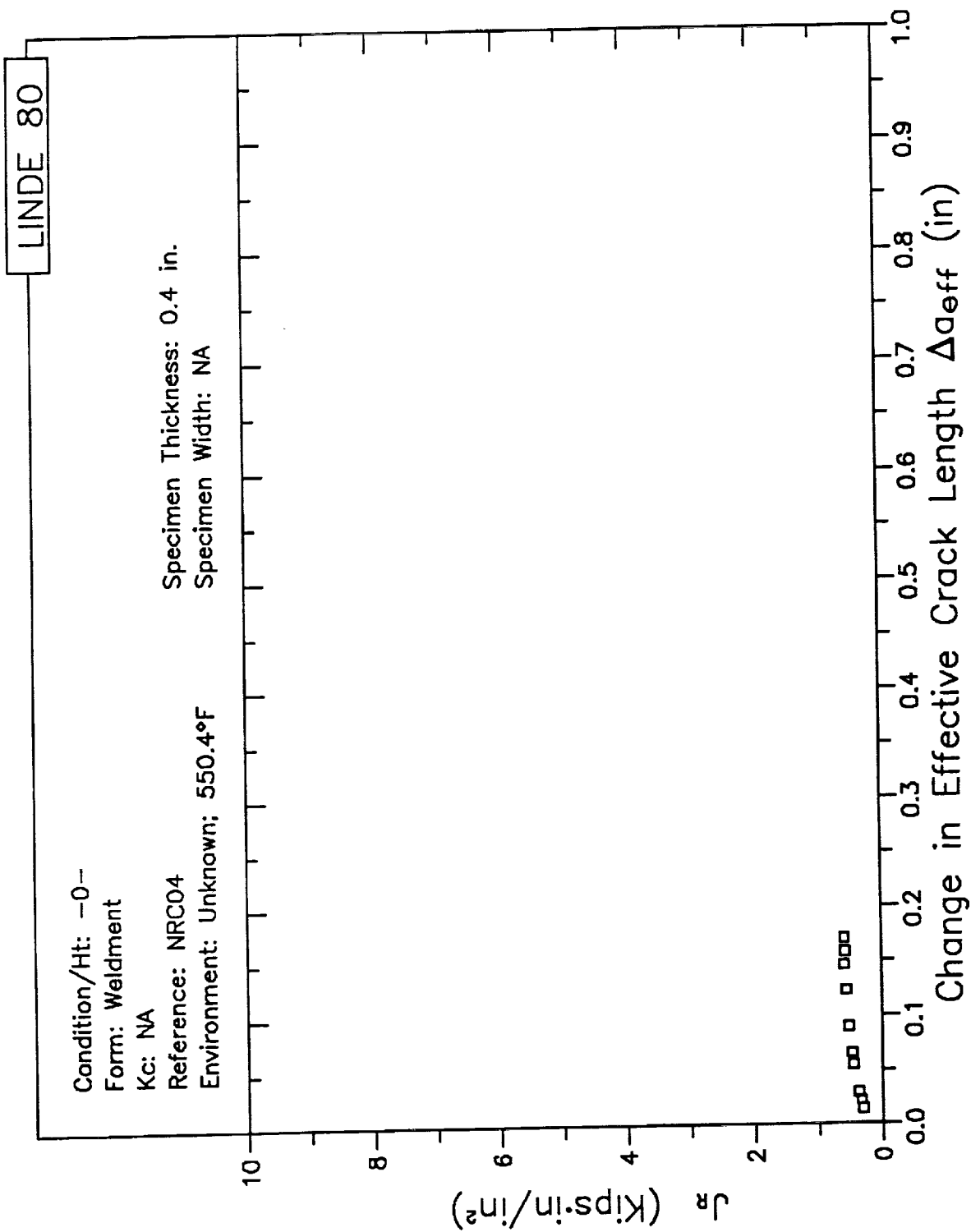


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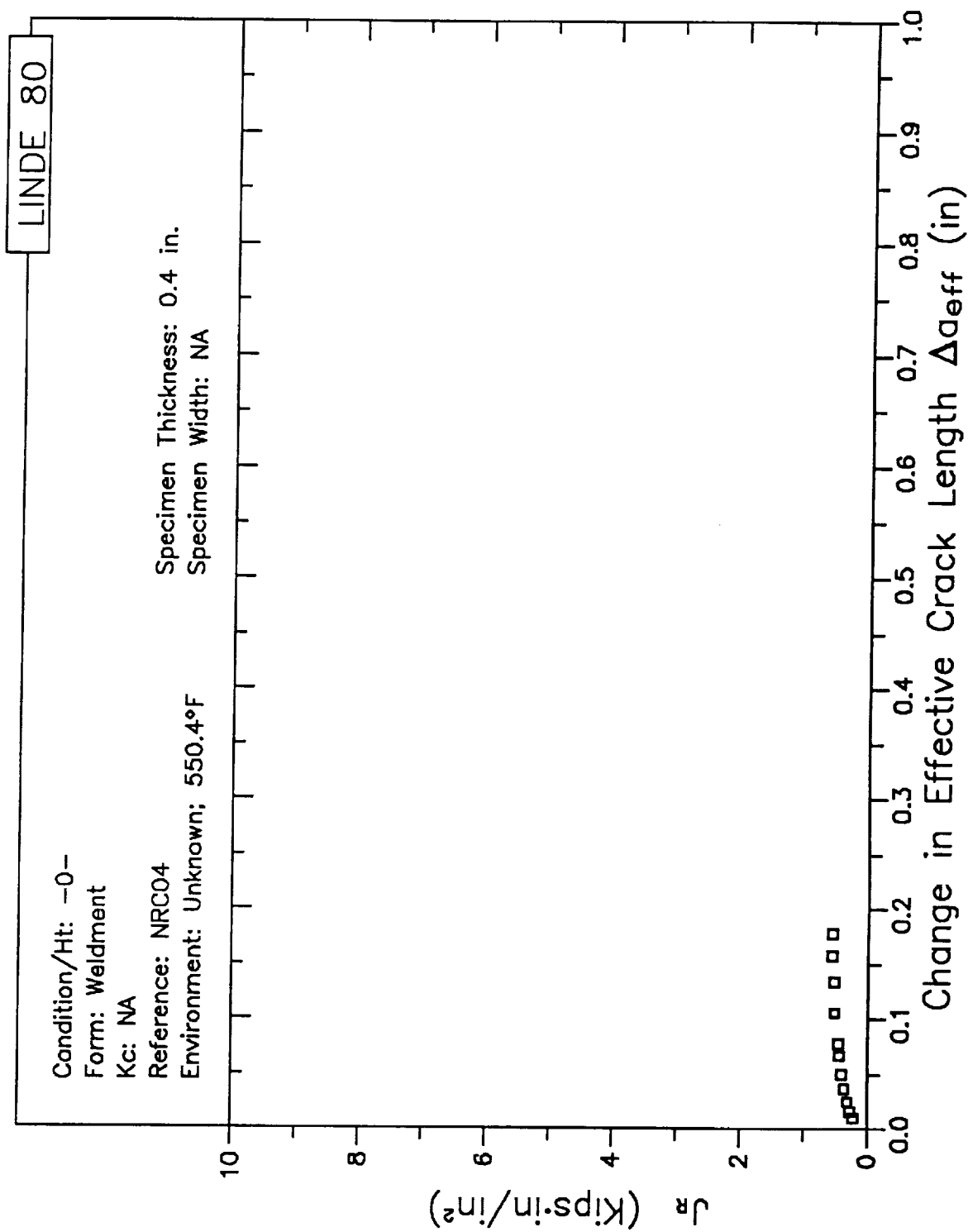
# RESISTANCE CURVE



# RESISTANCE CURVE



# RESISTANCE CURVE

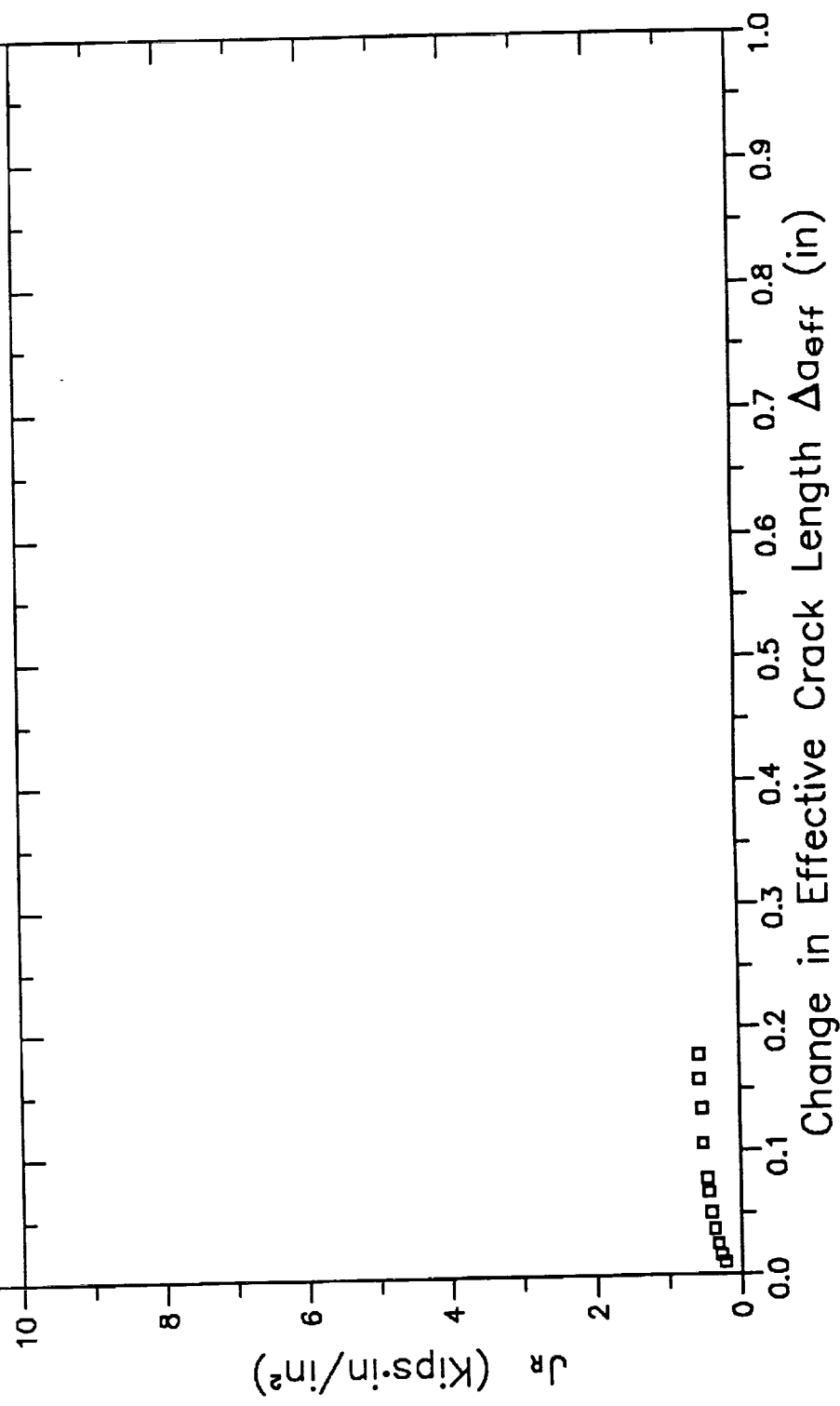


# RESISTANCE CURVE

LINDE 80

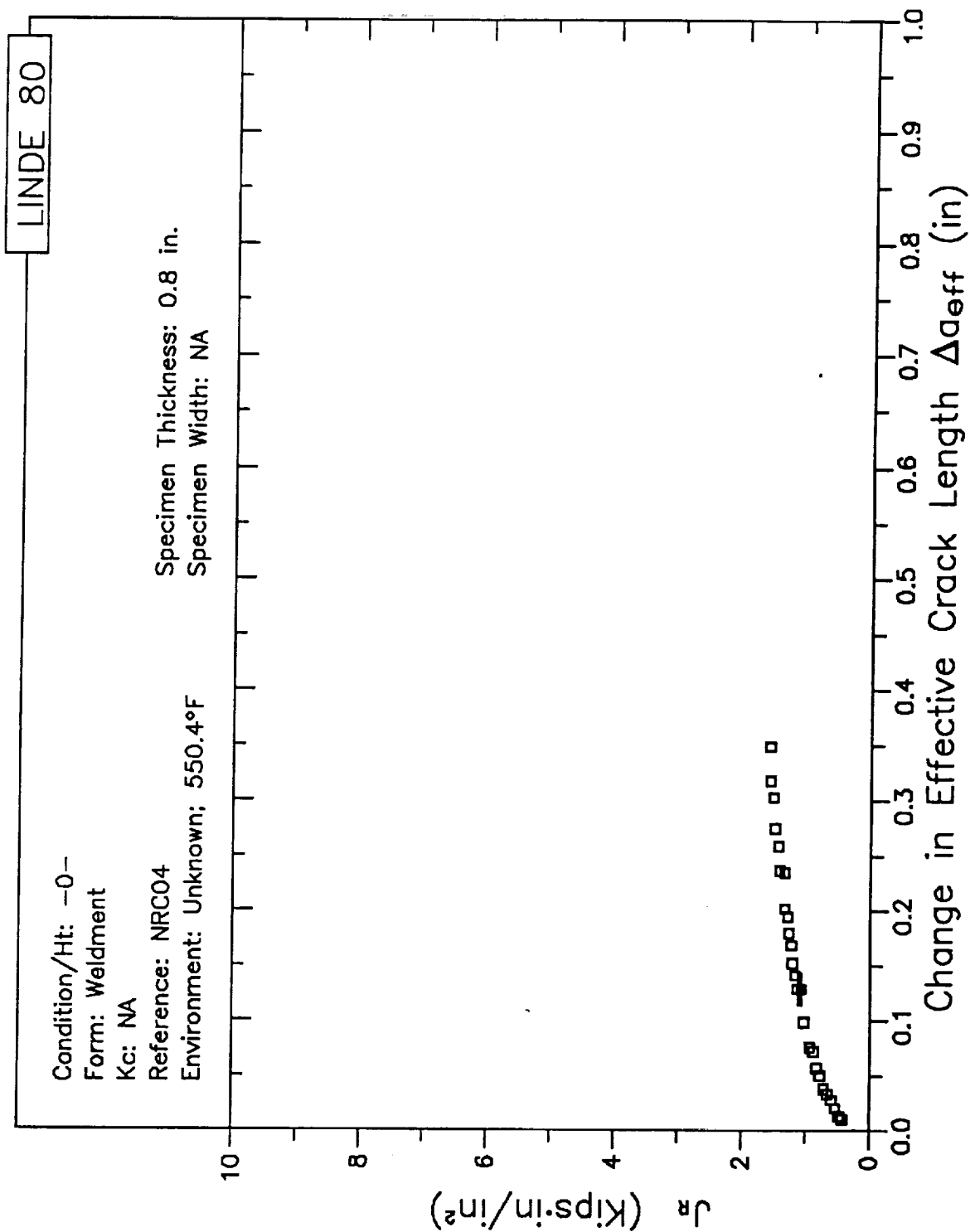
Condition/Ht: -0-  
 Form: Weldment  
 Kc: NA  
 Reference: NRC04  
 Environment: Unknown; 550.4°F

Specimen Thickness: 0.8 in.  
 Specimen Width: NA

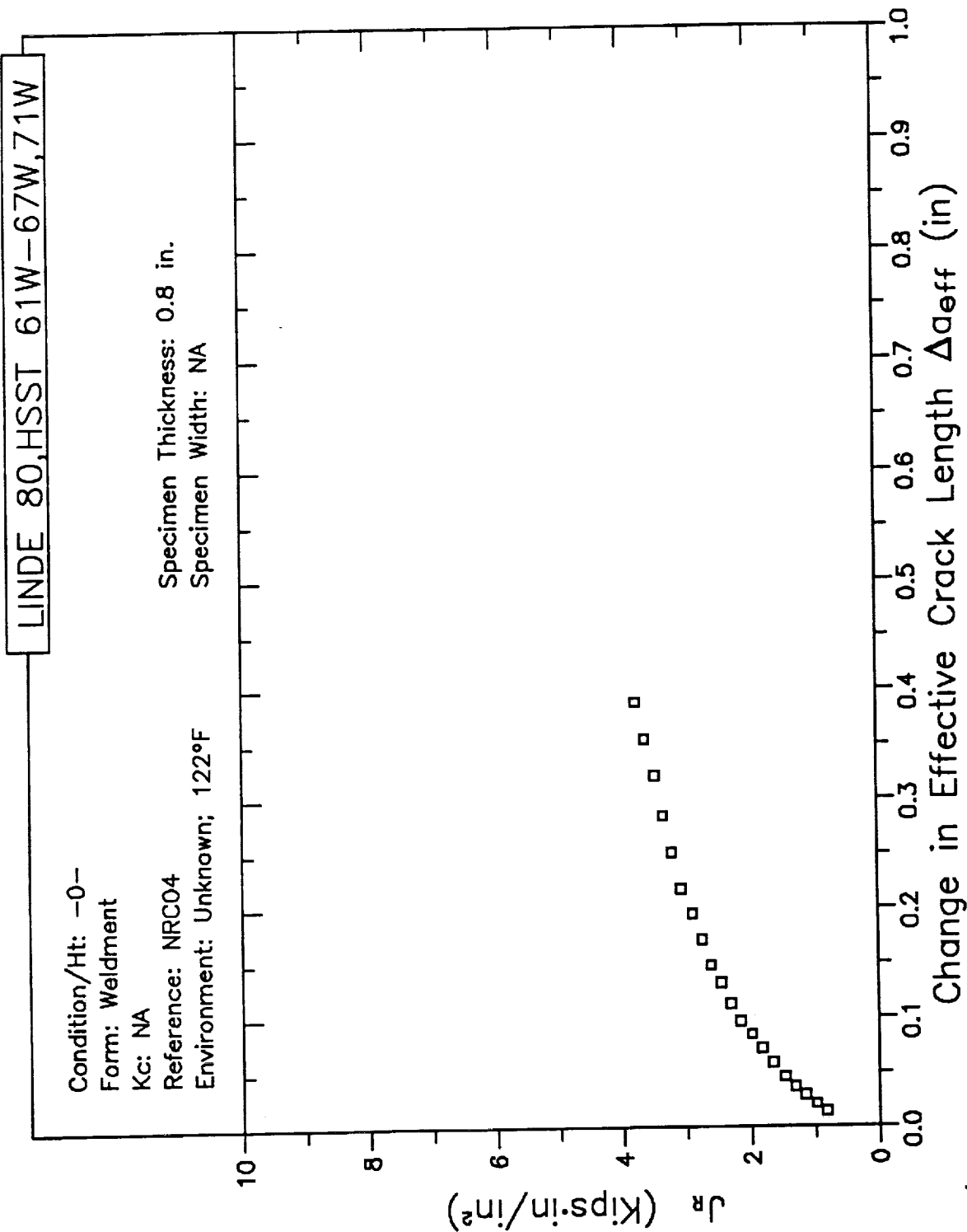




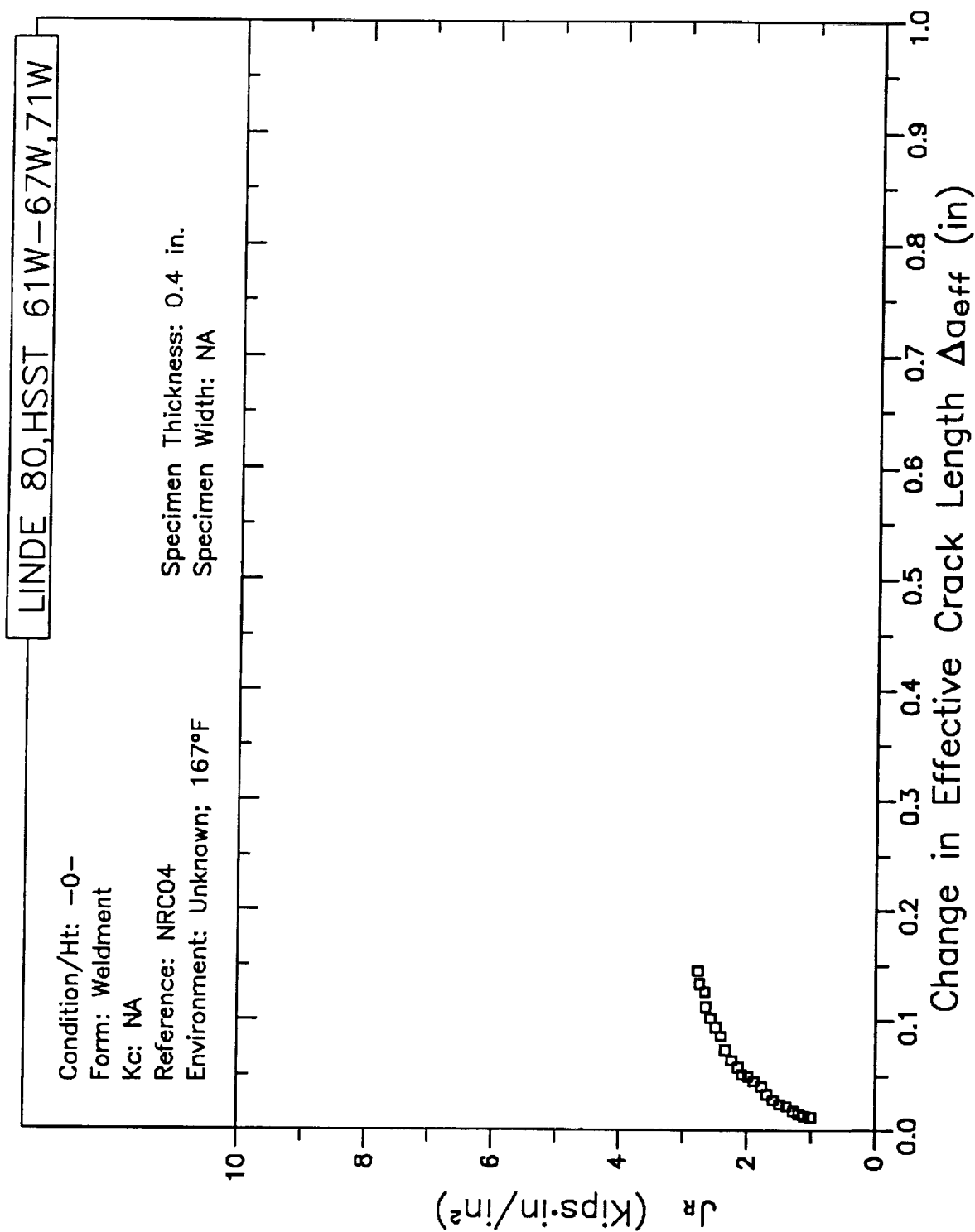
# RESISTANCE CURVE



# RESISTANCE CURVE



# RESISTANCE CURVE

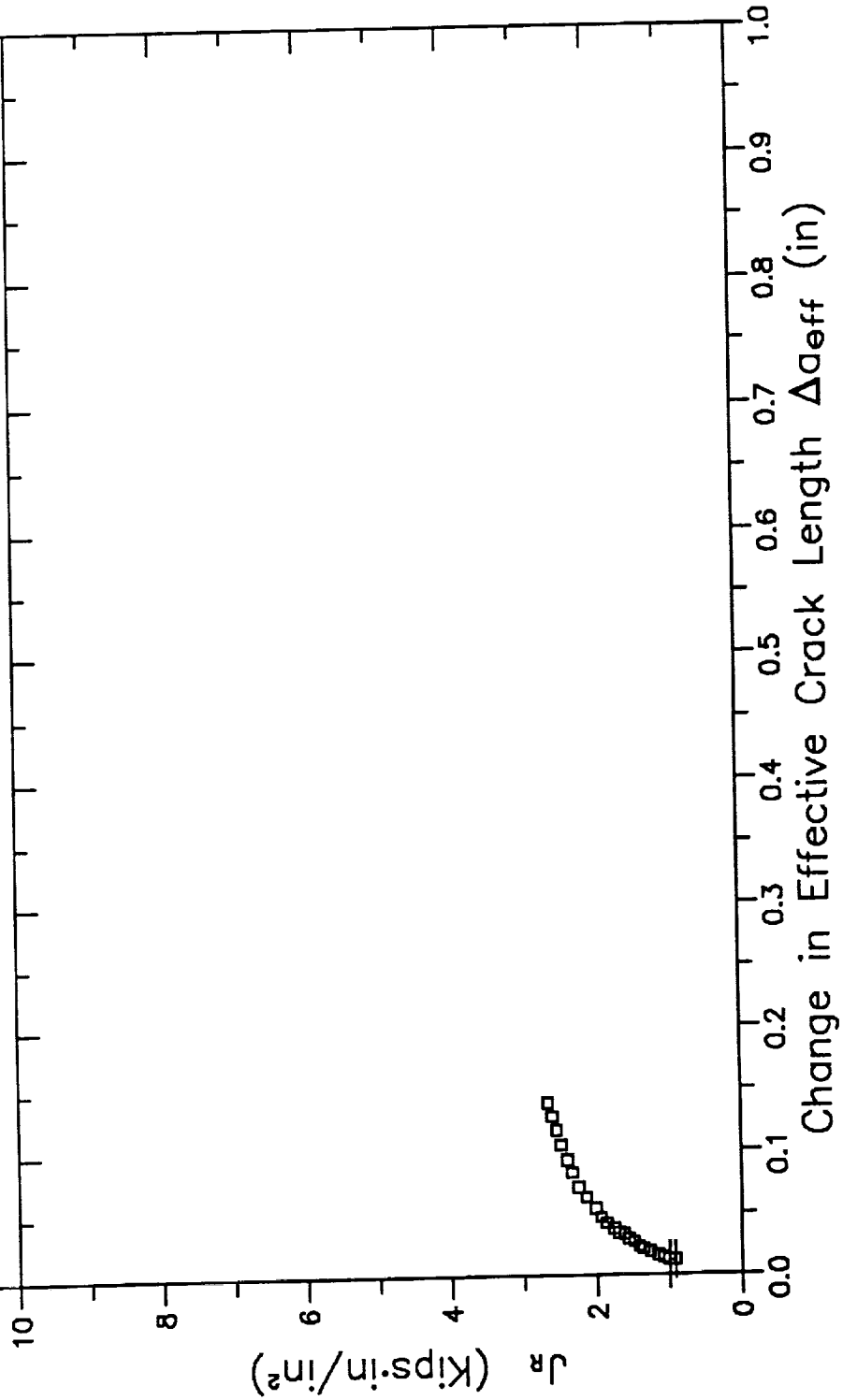


# RESISTANCE CURVE

LINDE 80,HSST 61W-67W,71W

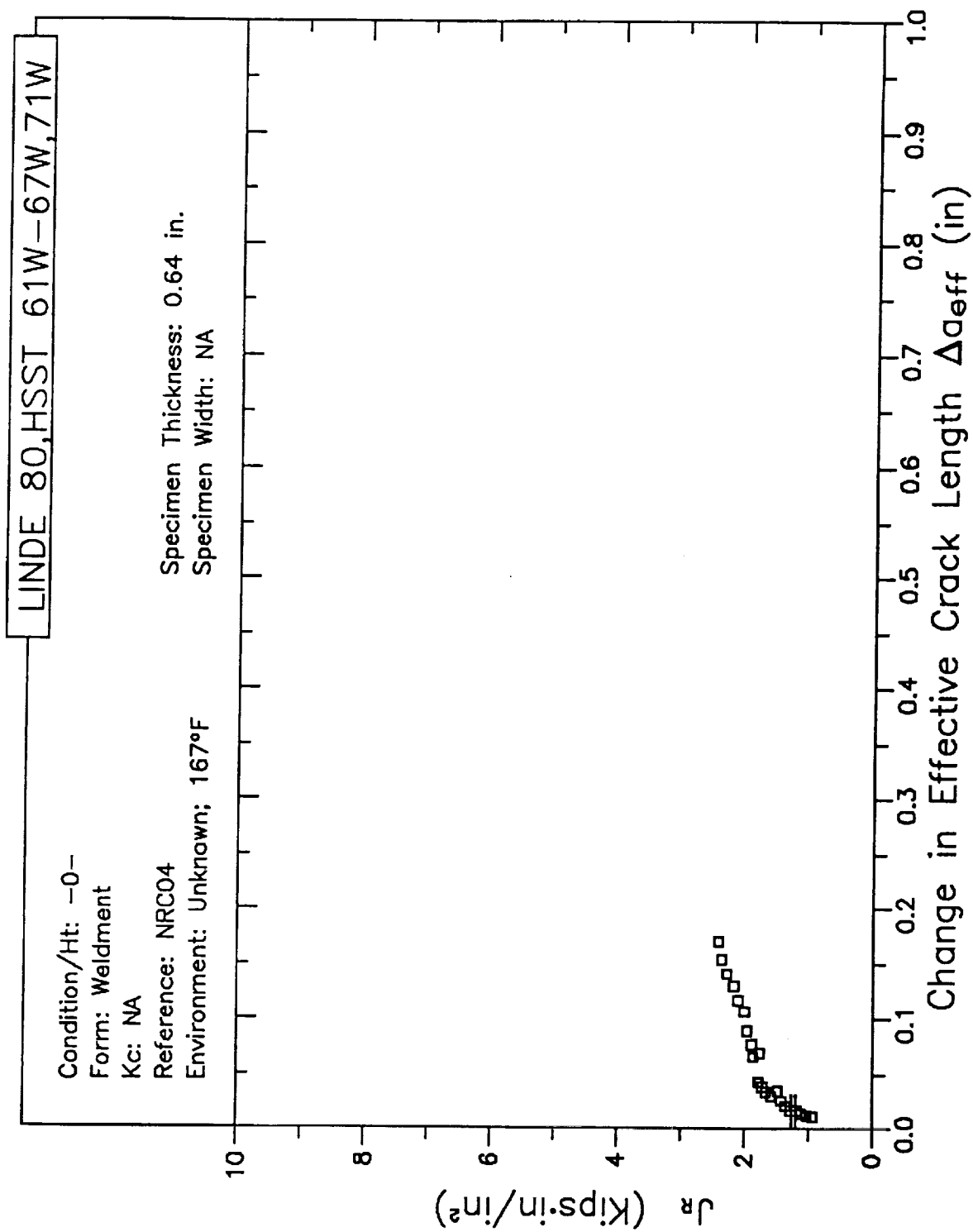
Condition/Ht: -0-  
Form: Waldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 167°F

Specimen Thickness: 0.4 in.  
Specimen Width: NA



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# RESISTANCE CURVE

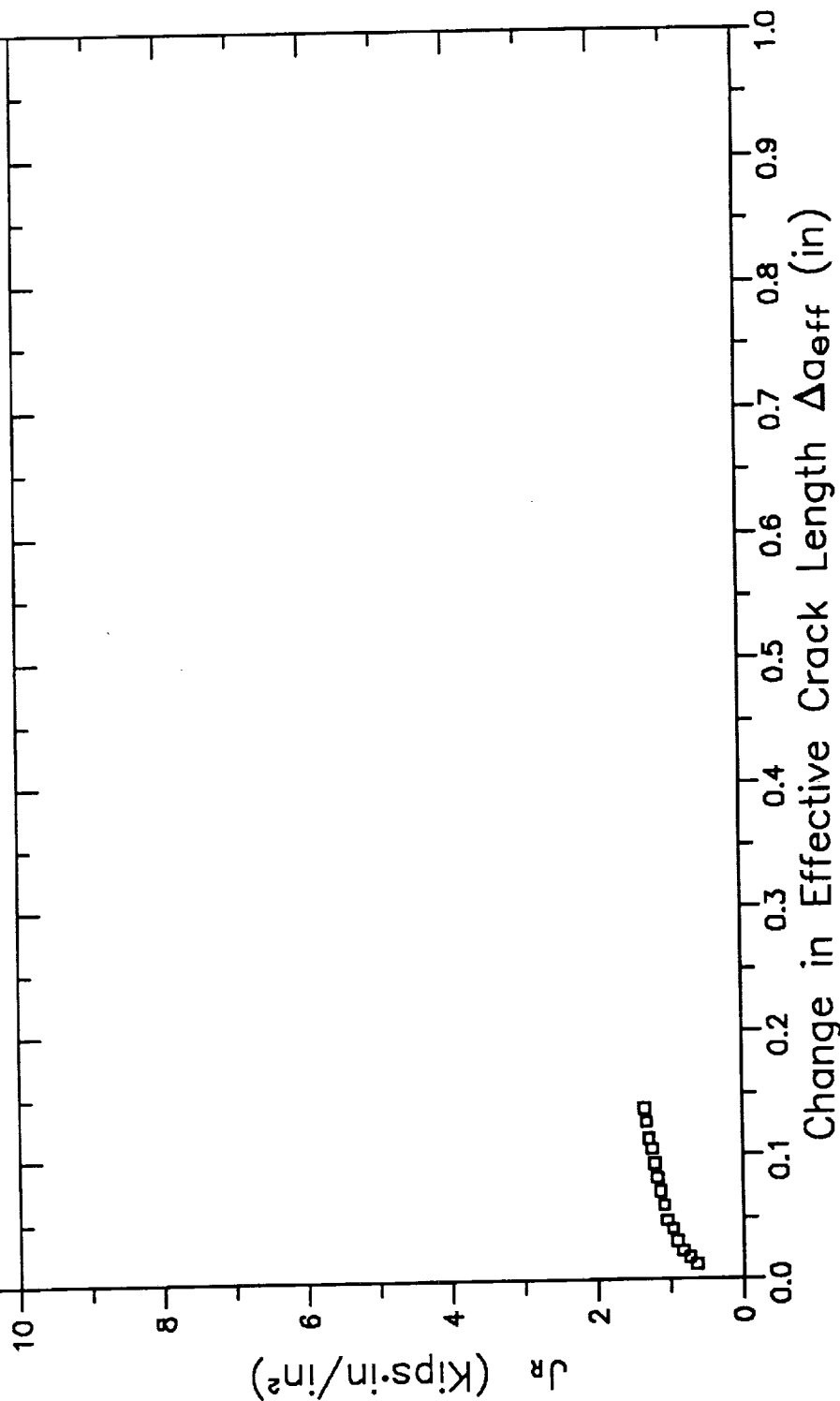


# RESISTANCE CURVE

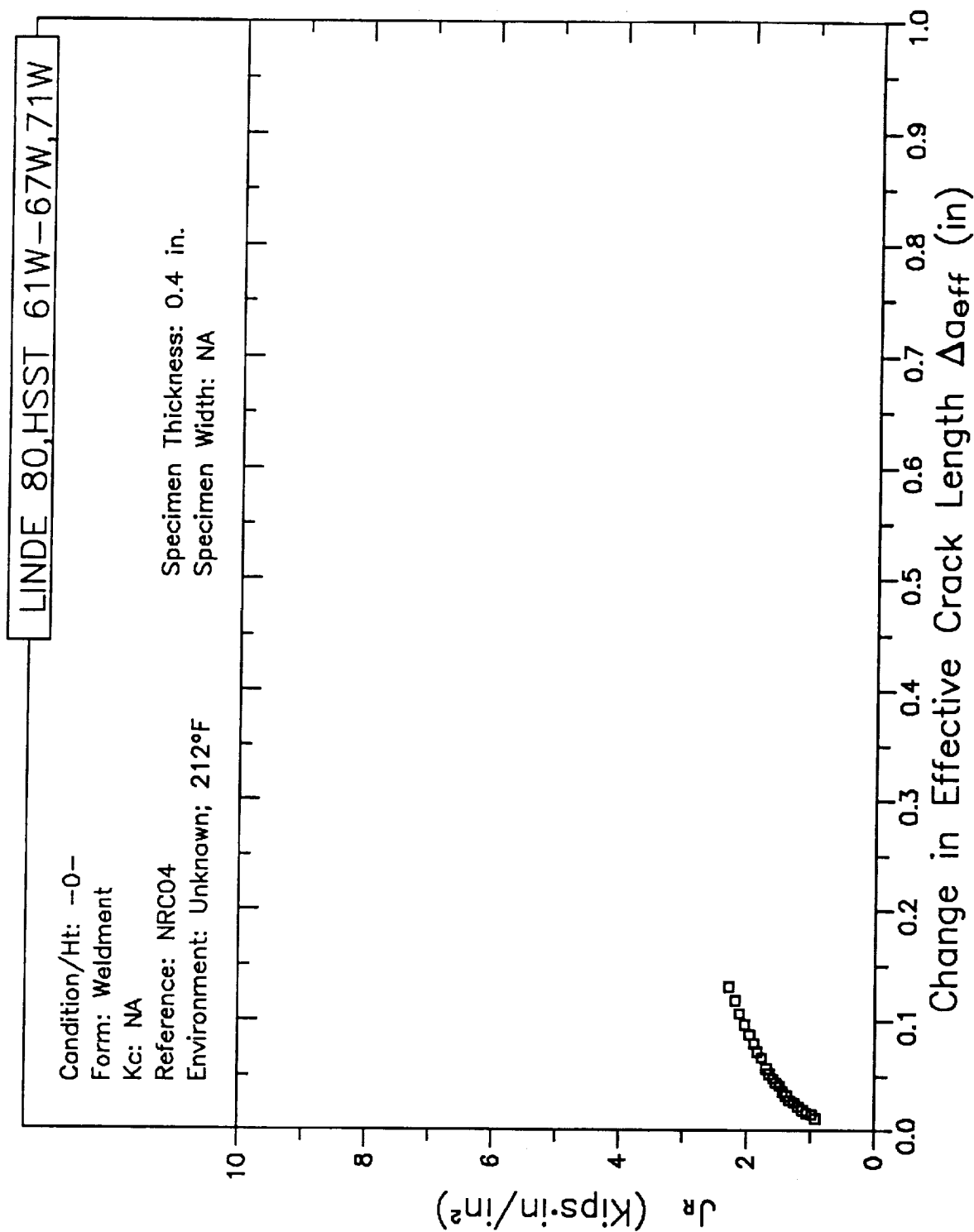
LINDE 80,HSST 61W-67W,71W

Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 212°F

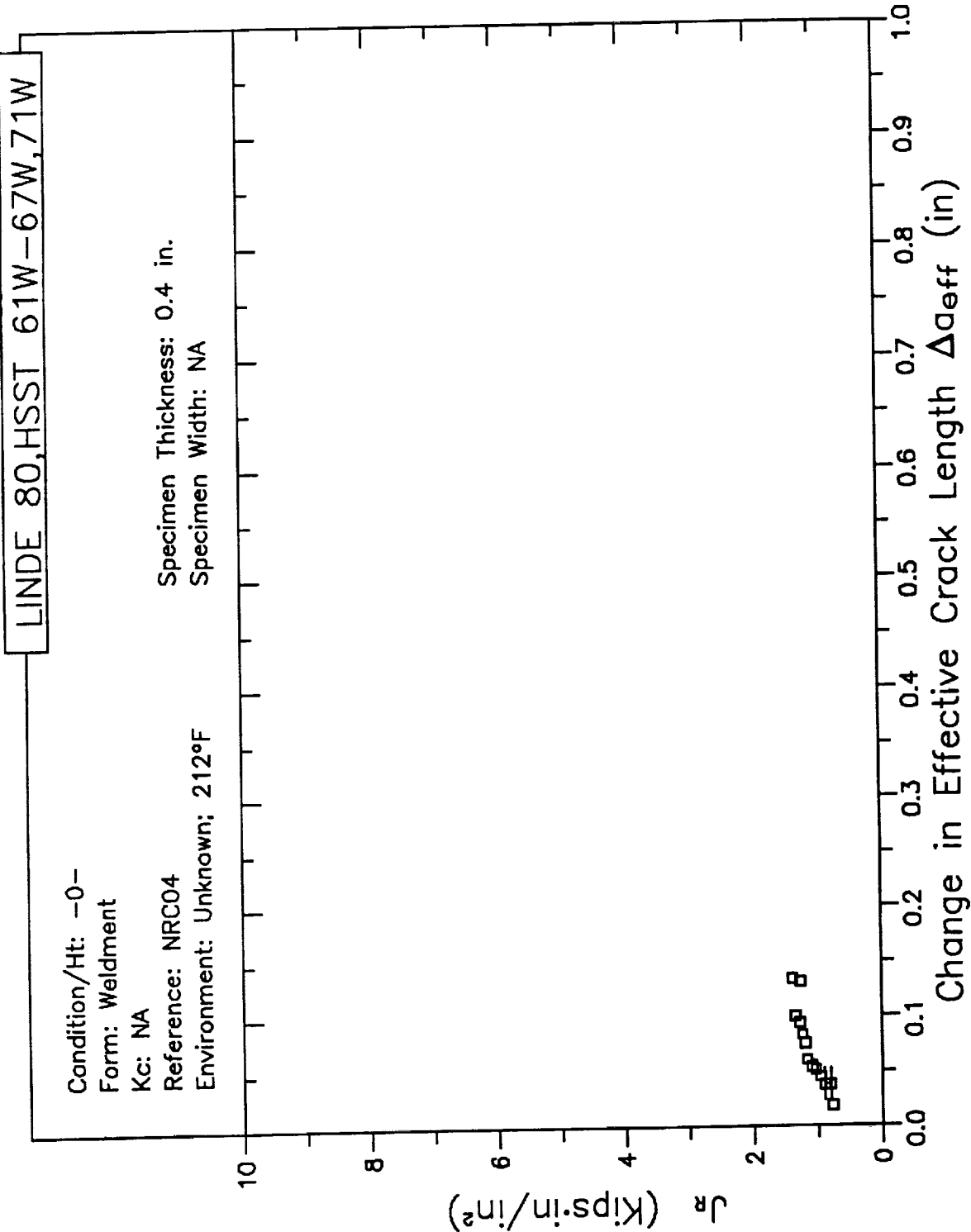
Specimen Thickness: 0.4 in.  
Specimen Width: NA



# RESISTANCE CURVE

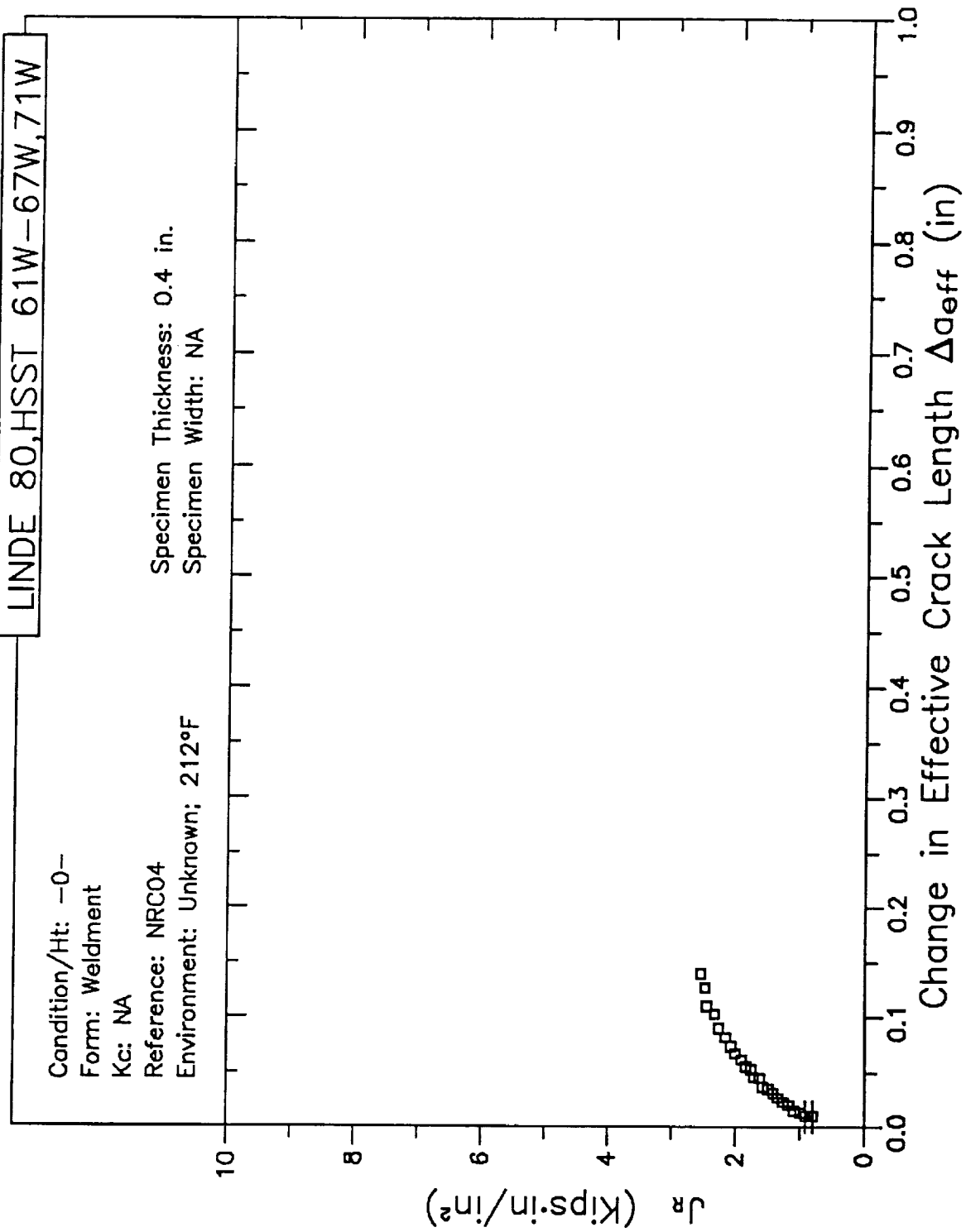


# RESISTANCE CURVE

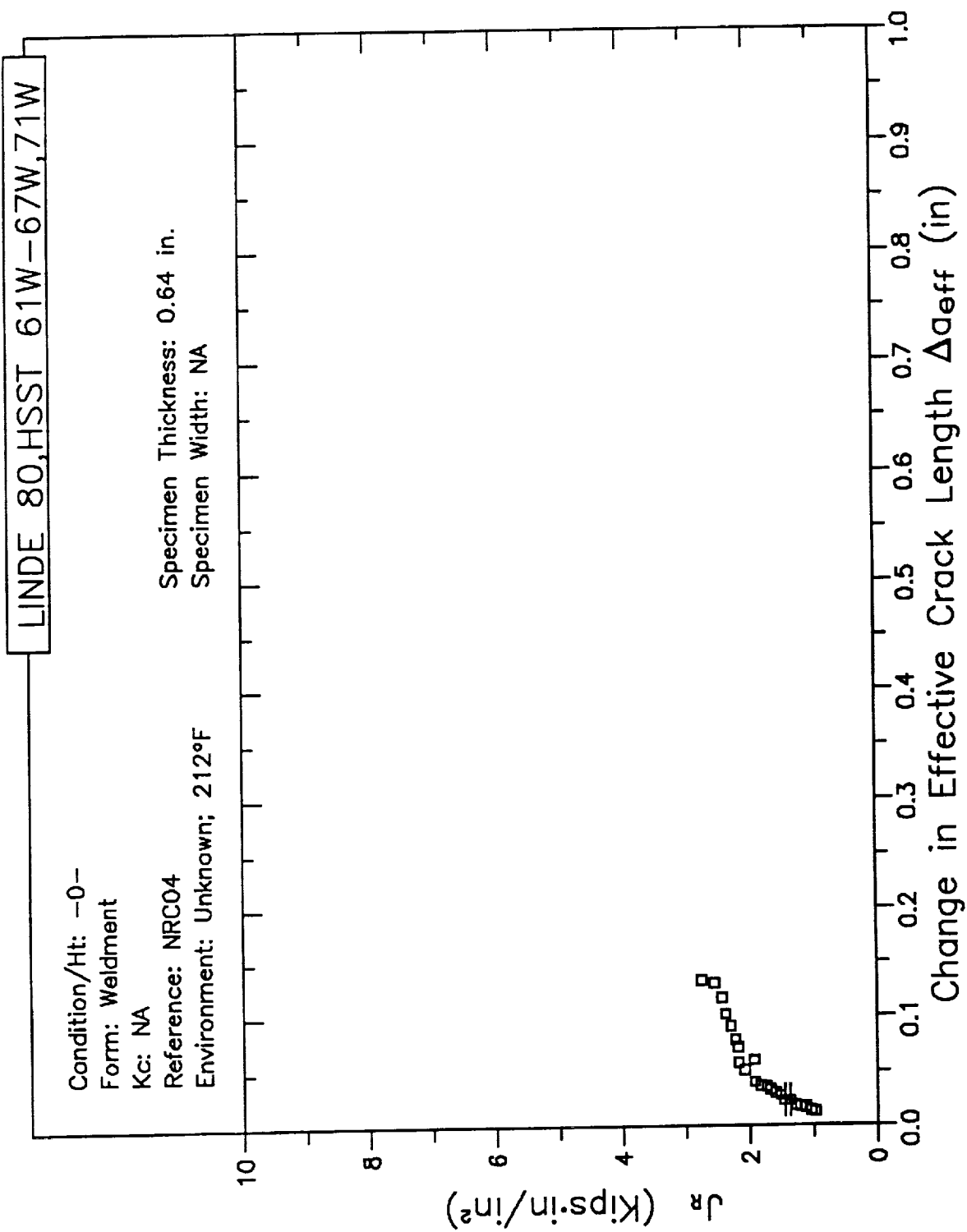




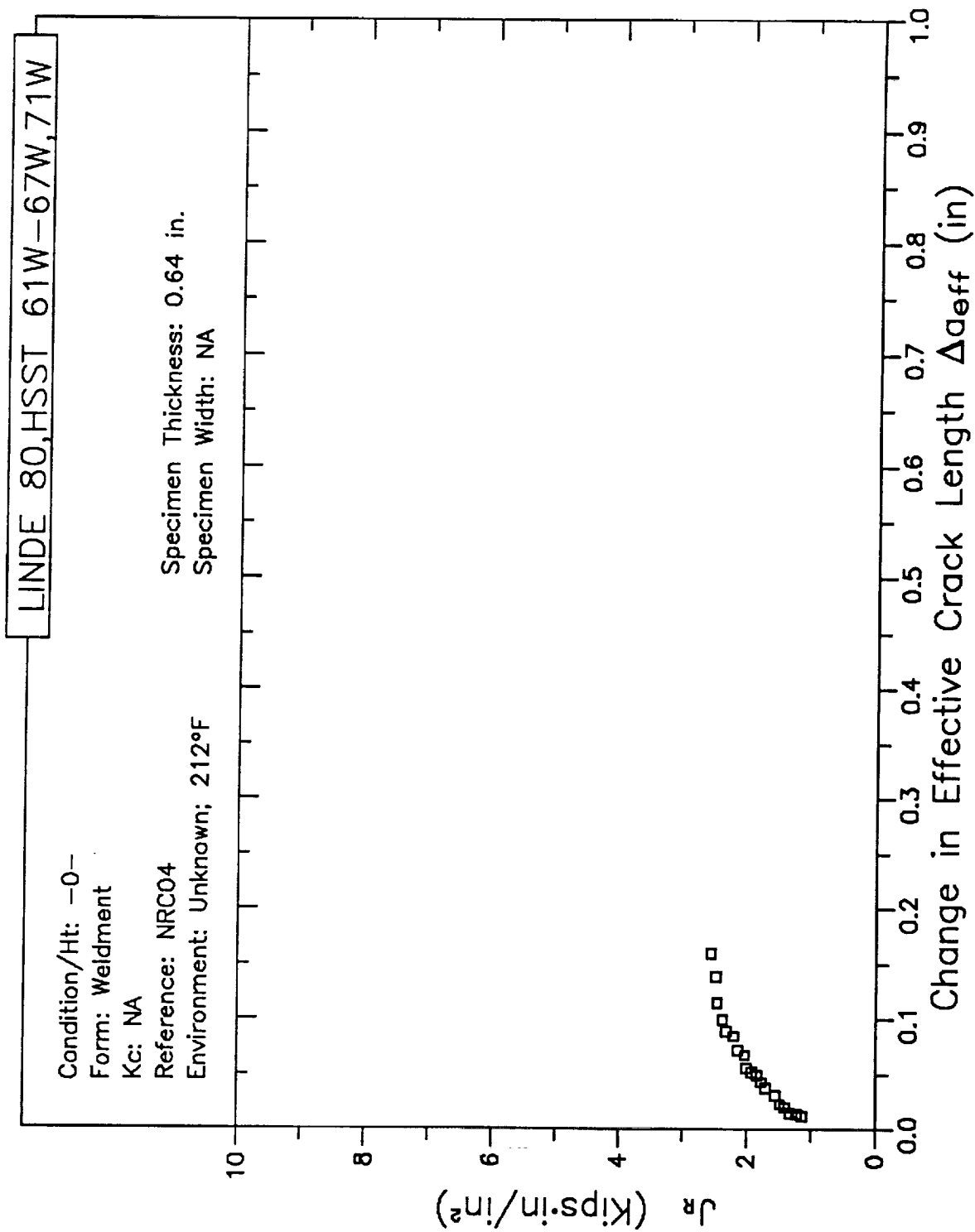
# RESISTANCE CURVE



# RESISTANCE CURVE



# RESISTANCE CURVE

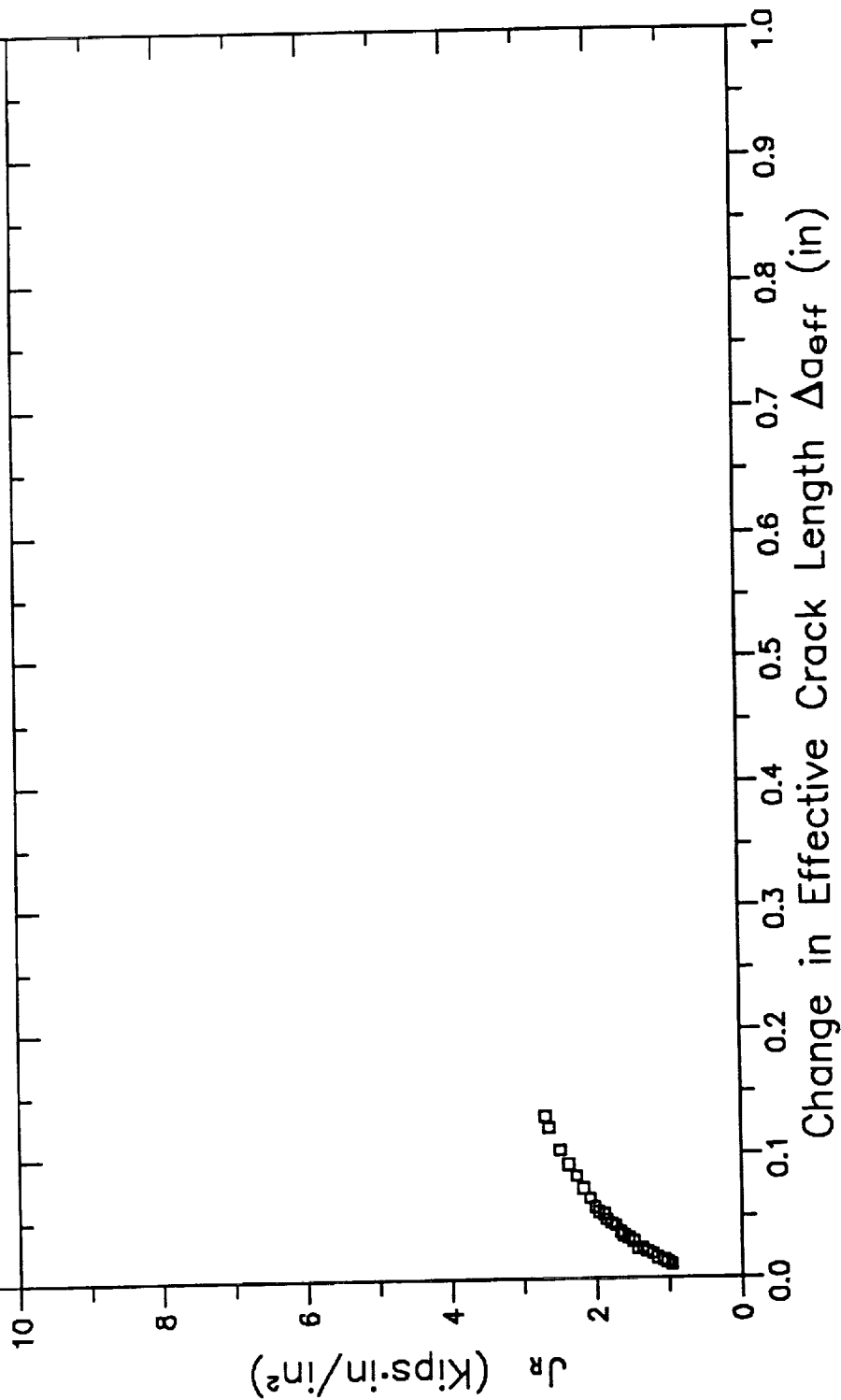


# RESISTANCE CURVE

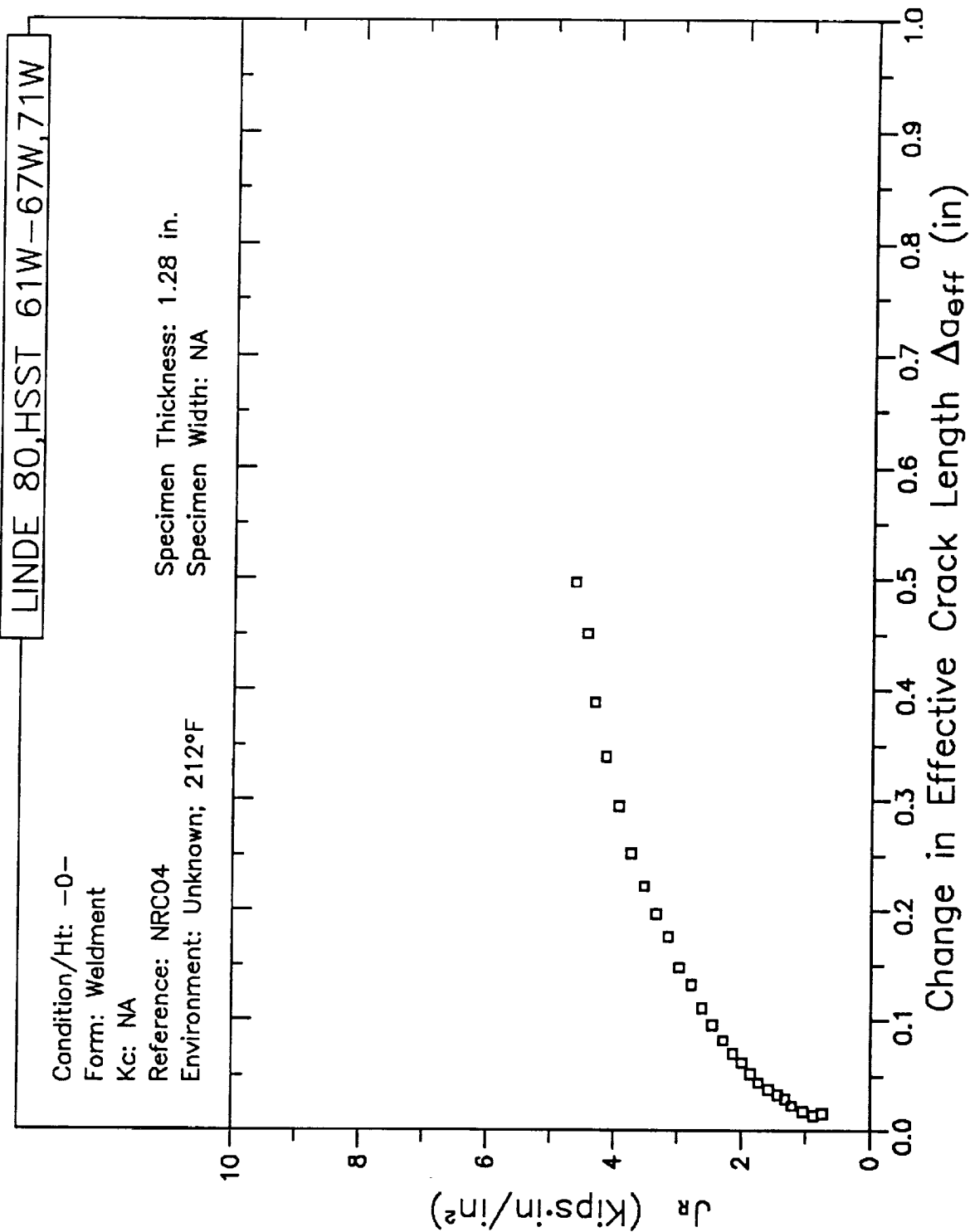
LINDE 80,HSST 61W-67W,71W

Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 212°F

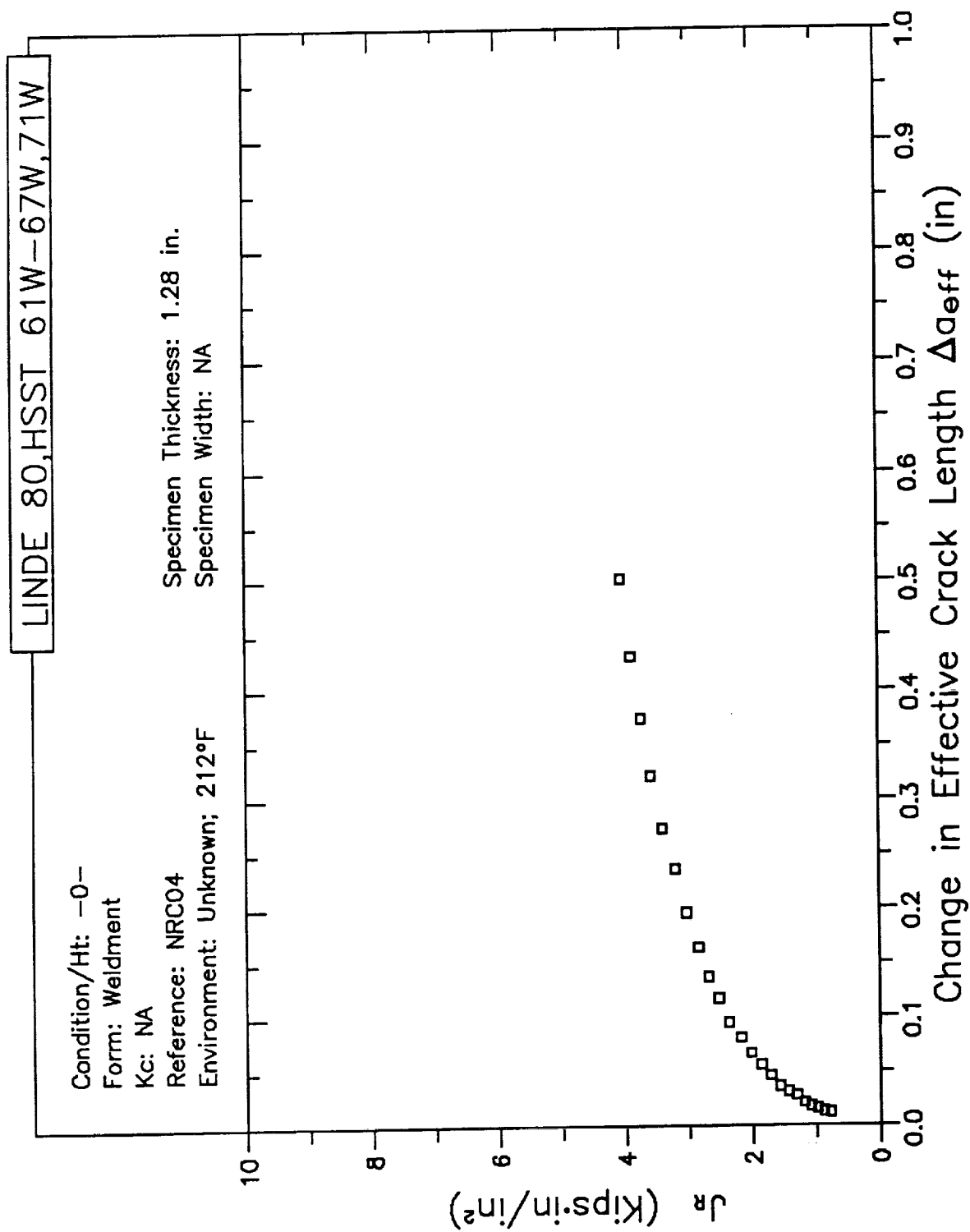
Specimen Thickness: 0.64 in.  
Specimen Width: NA



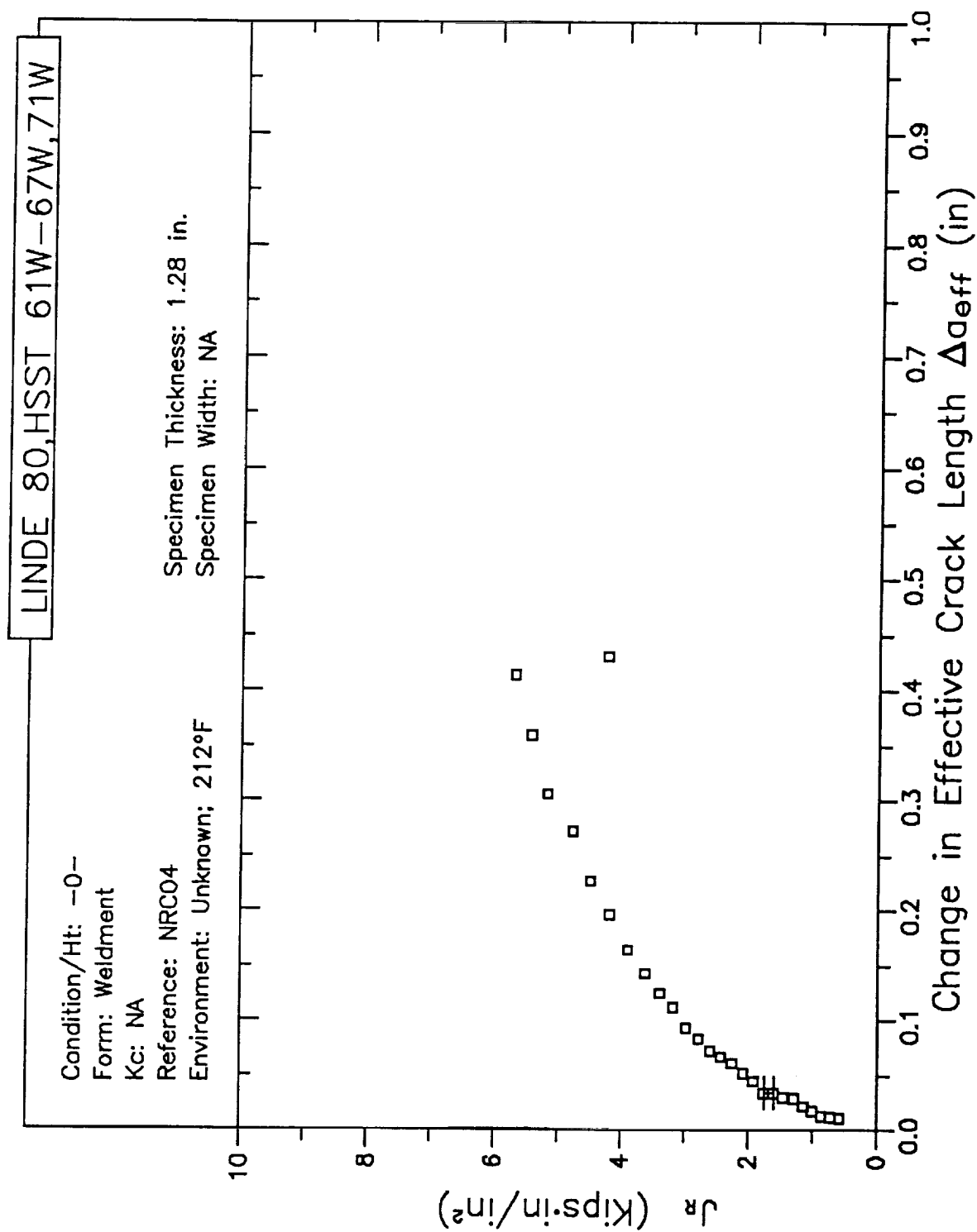
# RESISTANCE CURVE



# RESISTANCE CURVE



# RESISTANCE CURVE

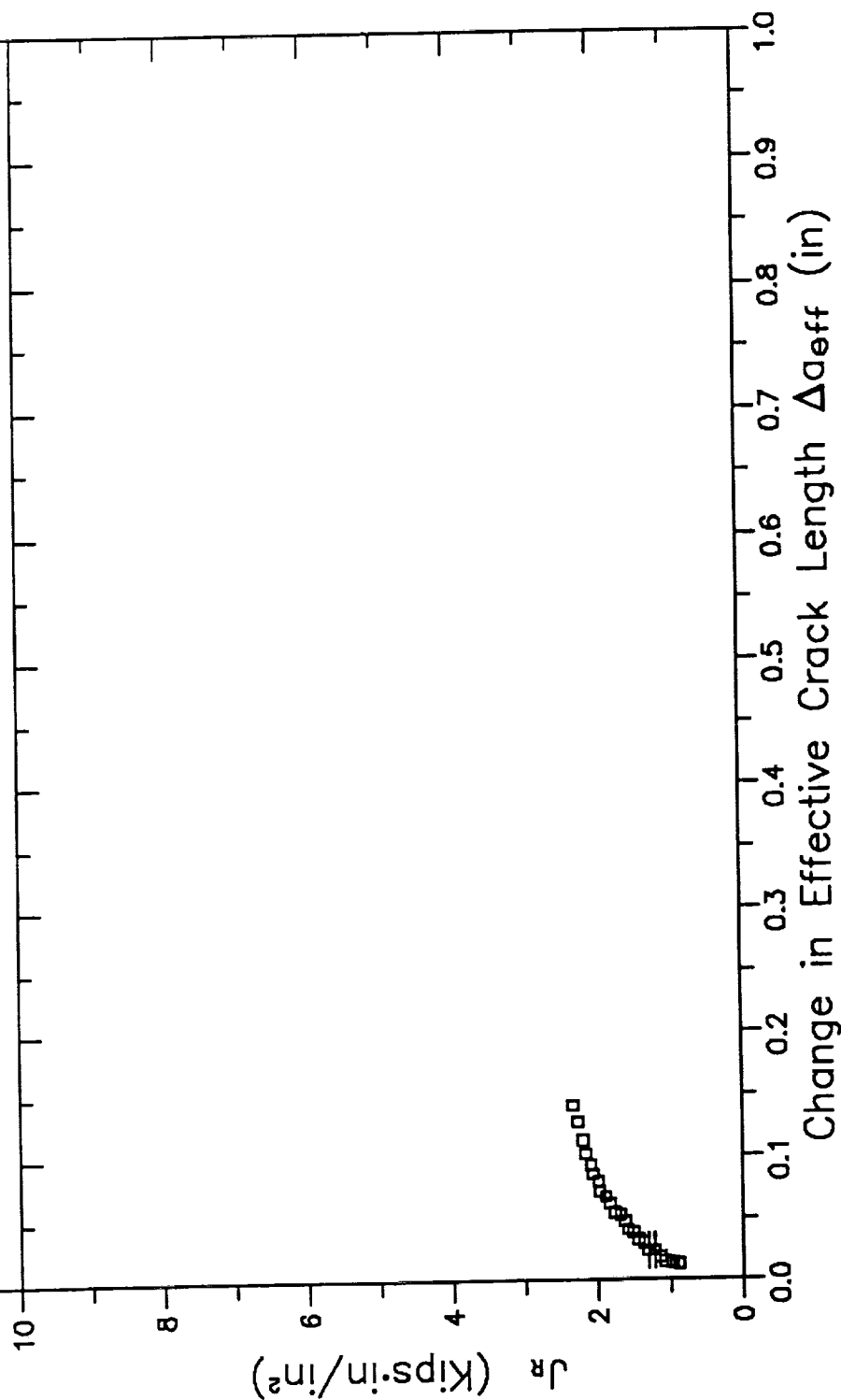


# RESISTANCE CURVE

LINDE 80, HSST 61W-67W, 71W

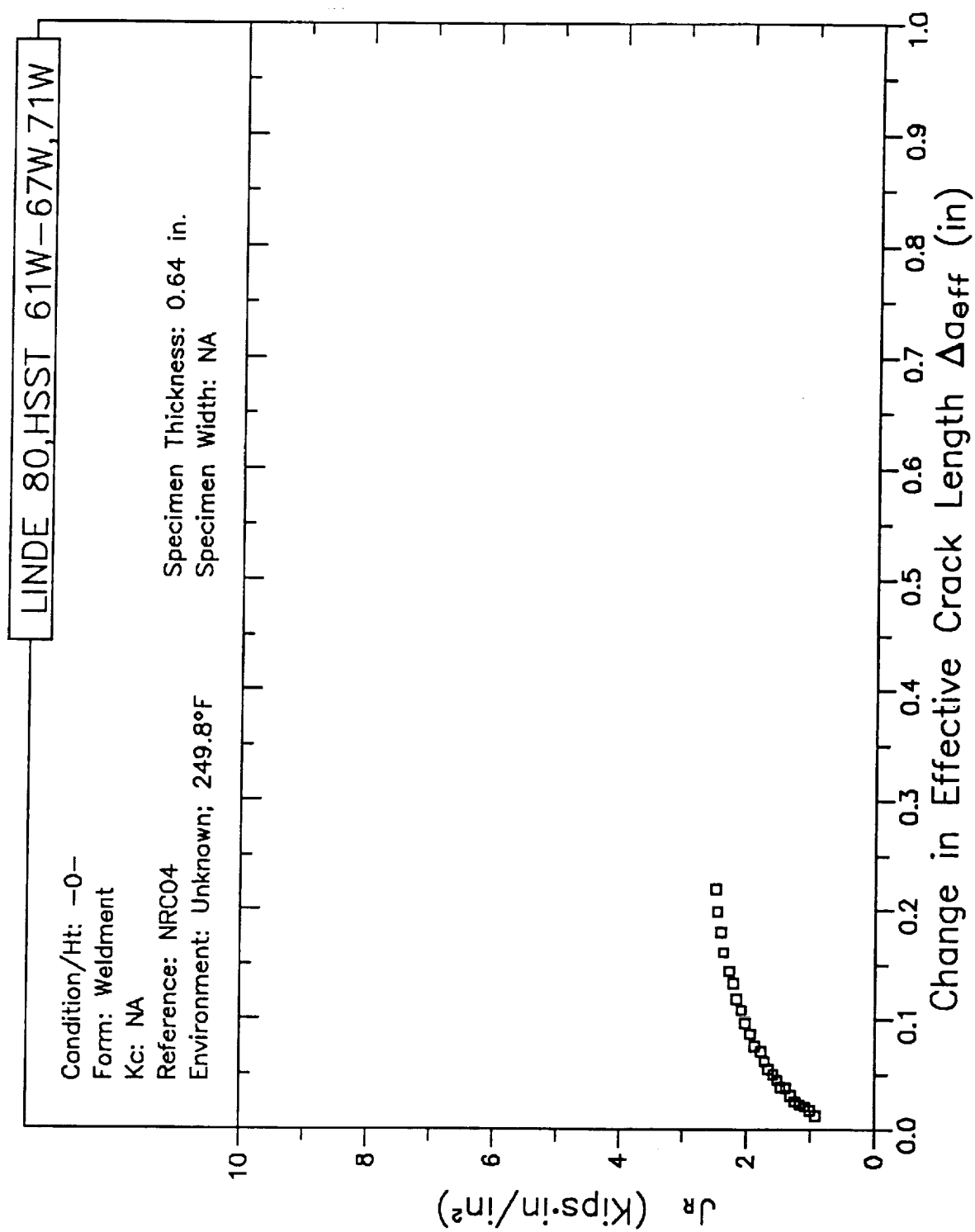
Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 249°F

Specimen Thickness: 0.4 in.  
Specimen Width: NA

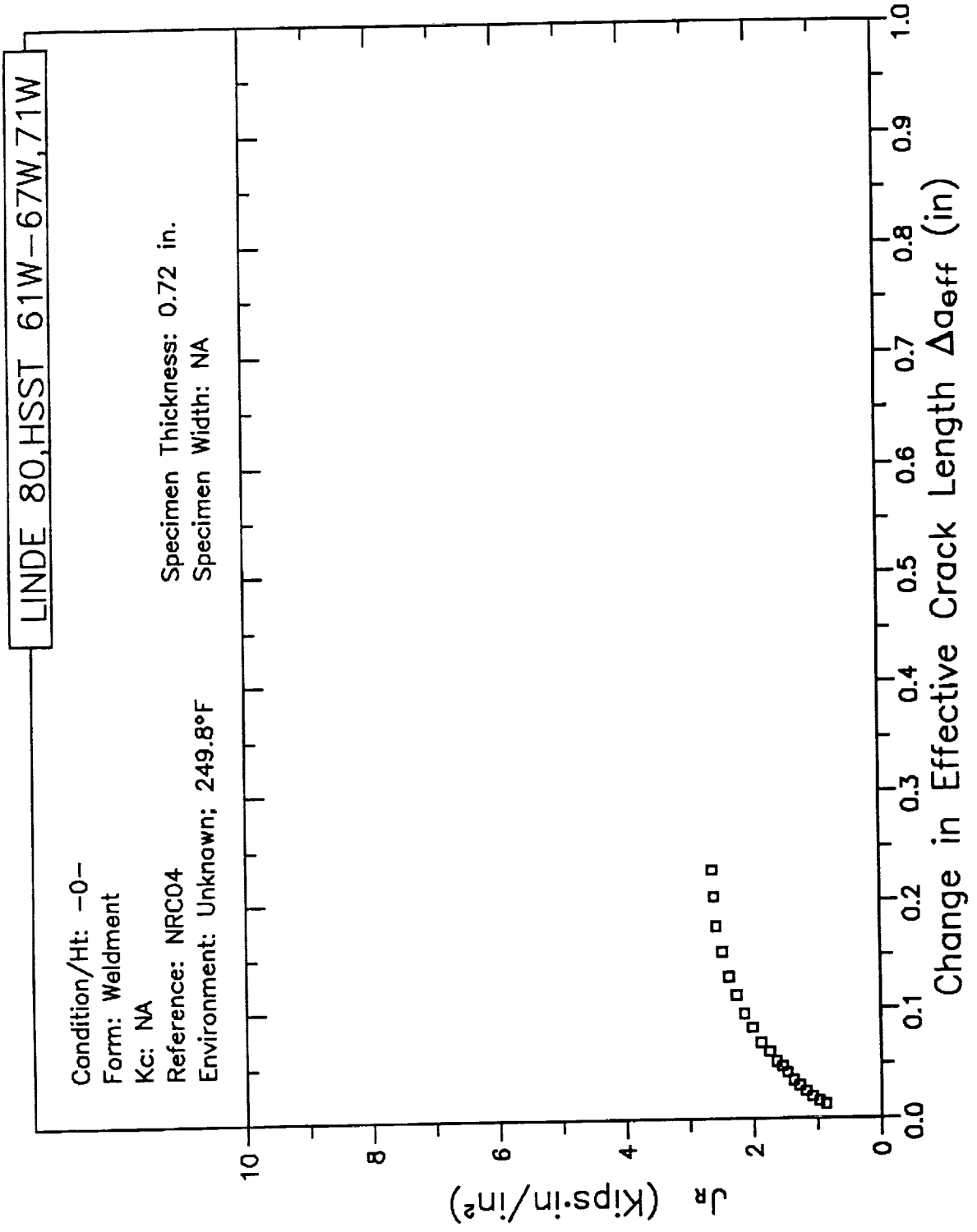




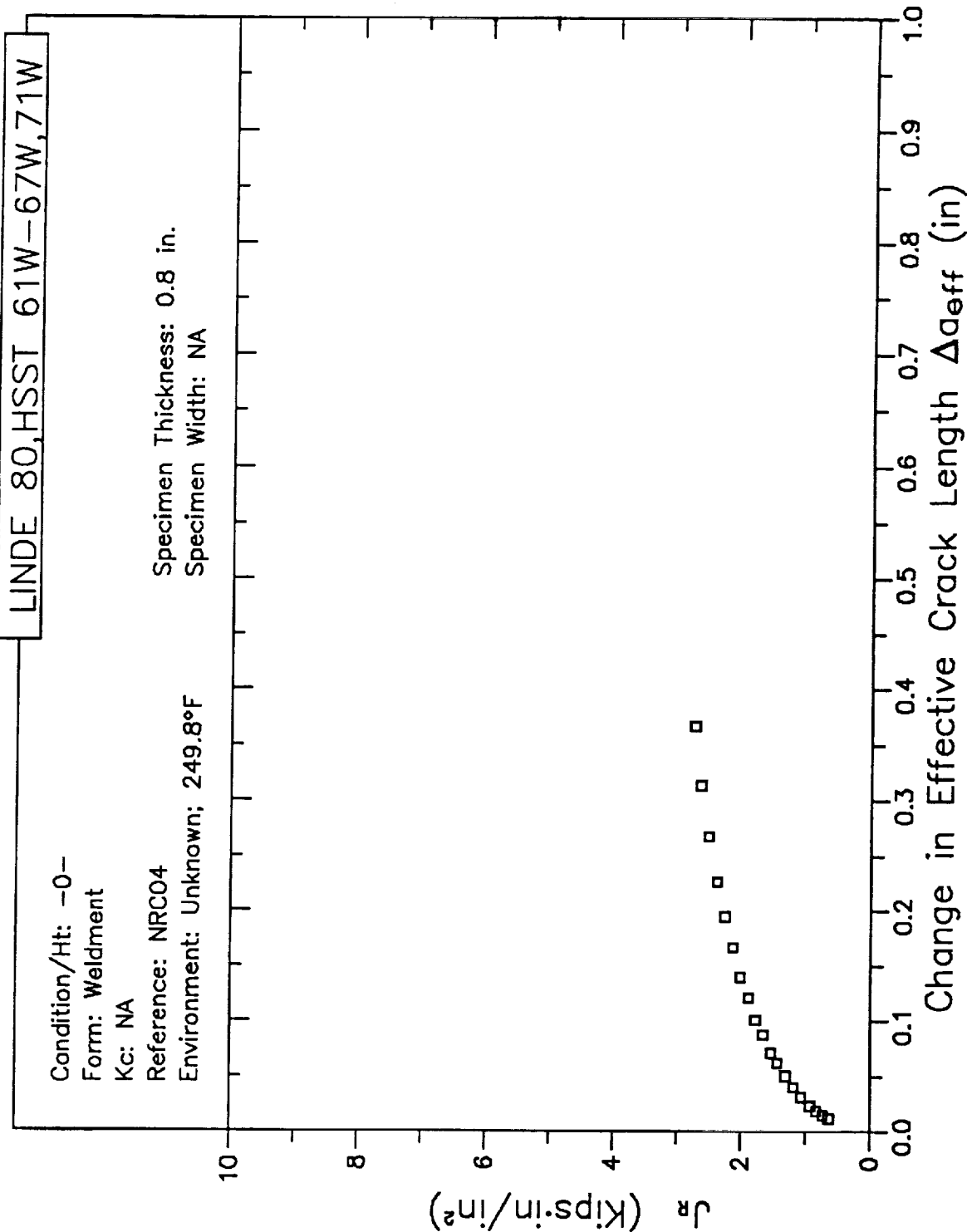
# RESISTANCE CURVE



# RESISTANCE CURVE



# RESISTANCE CURVE

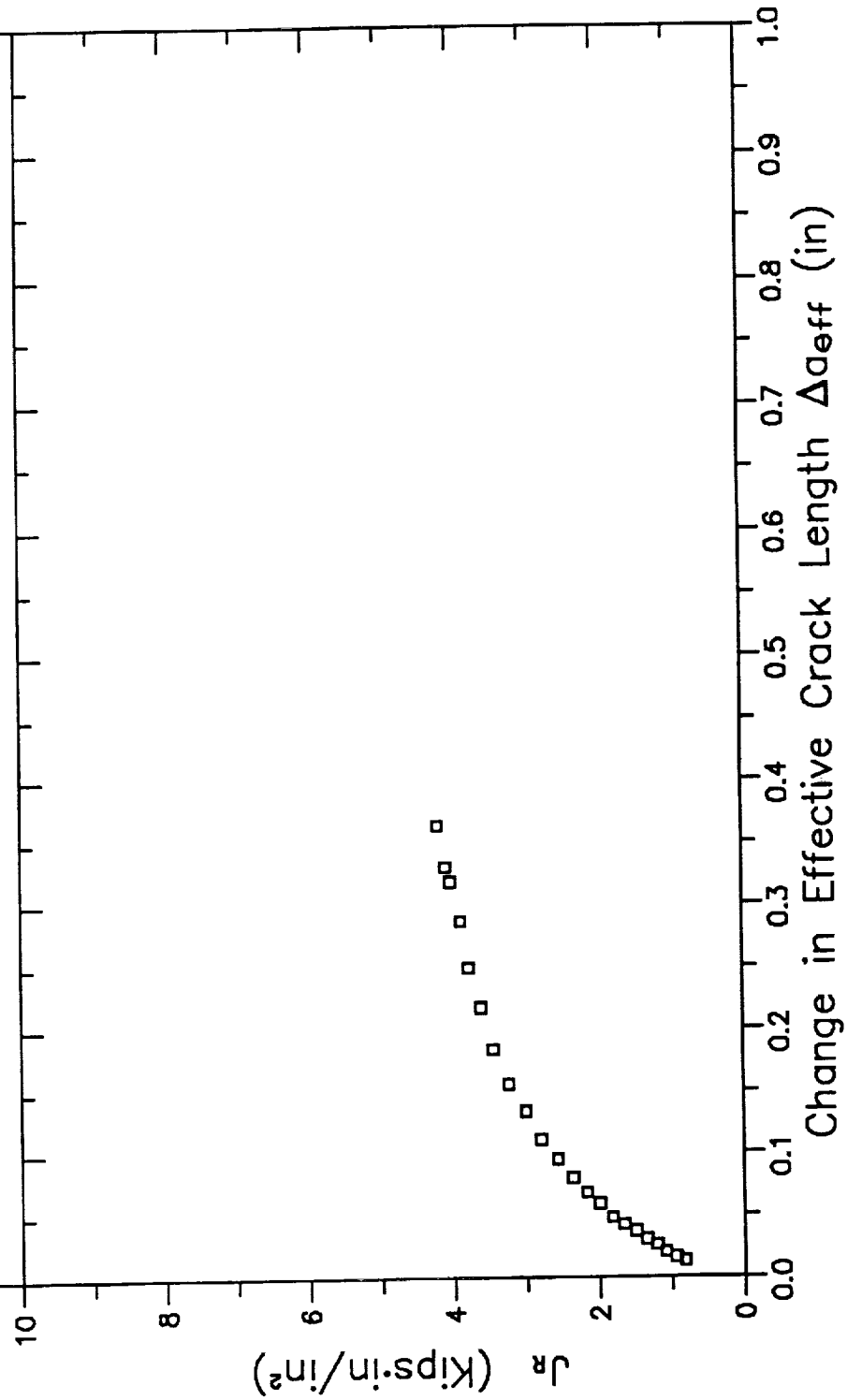


# RESISTANCE CURVE

LINDE 80,HSST 61W-67W,71W

Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 249.8°F

Specimen Thickness: 0.8 in.  
Specimen Width: NA



# RESISTANCE CURVE

LINDE 80,HSST 61W-67W,71W

Condition/Ht: -0-

Form: Weldment

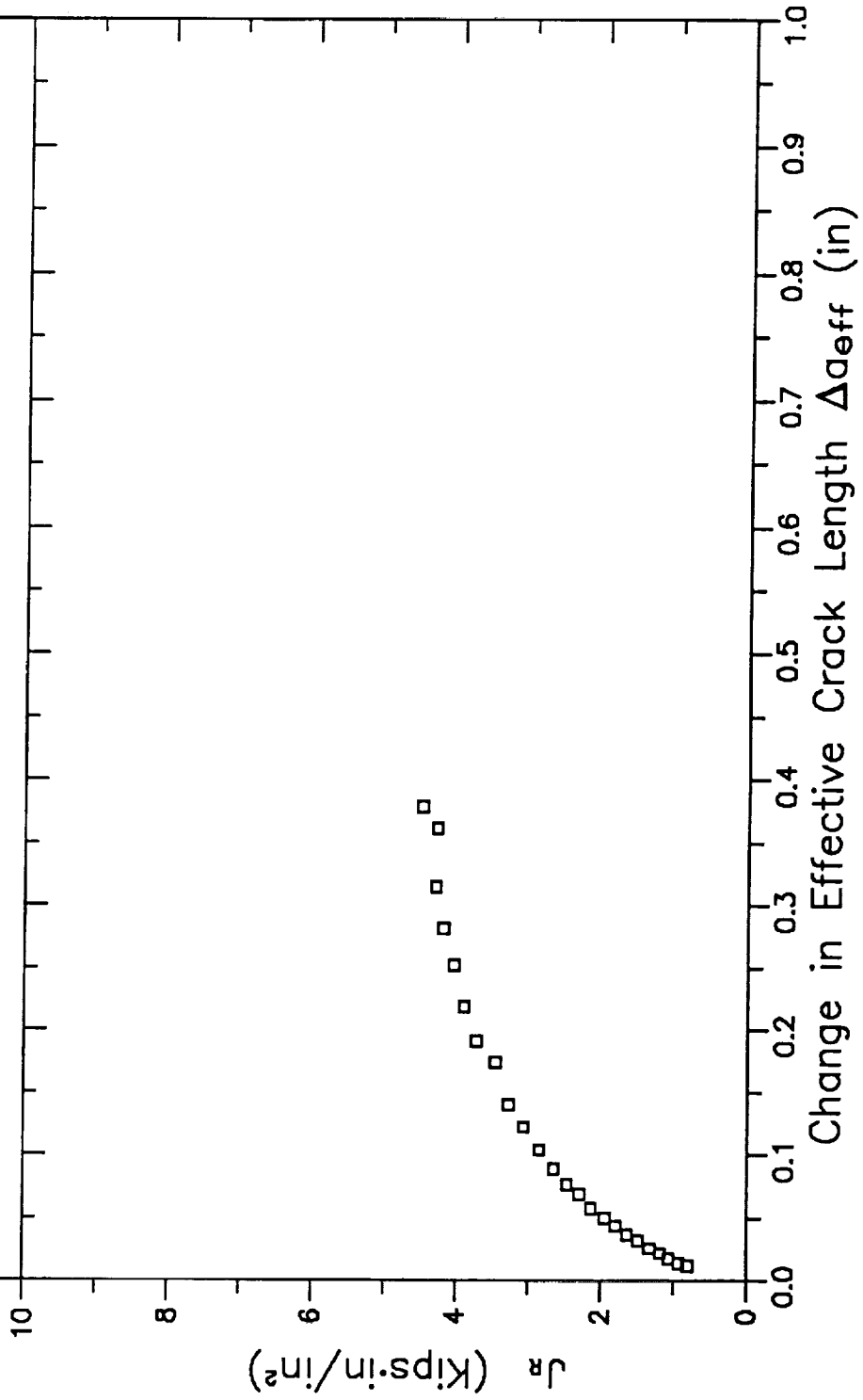
Kc: NA

Reference: NRC04

Environment: Unknown; 249.8°F

Specimen Thickness: 0.8 in.

Specimen Width: NA

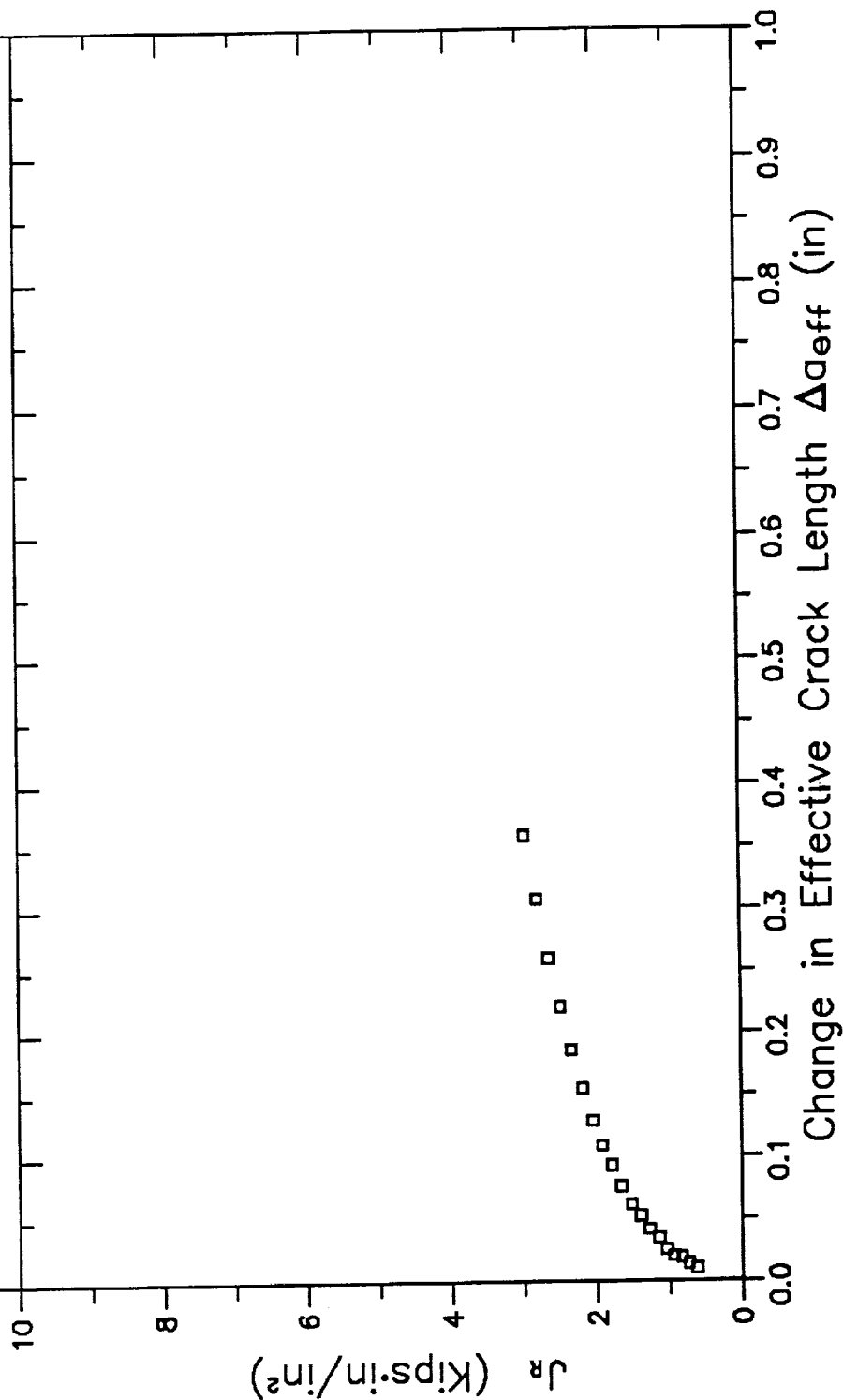


# RESISTANCE CURVE

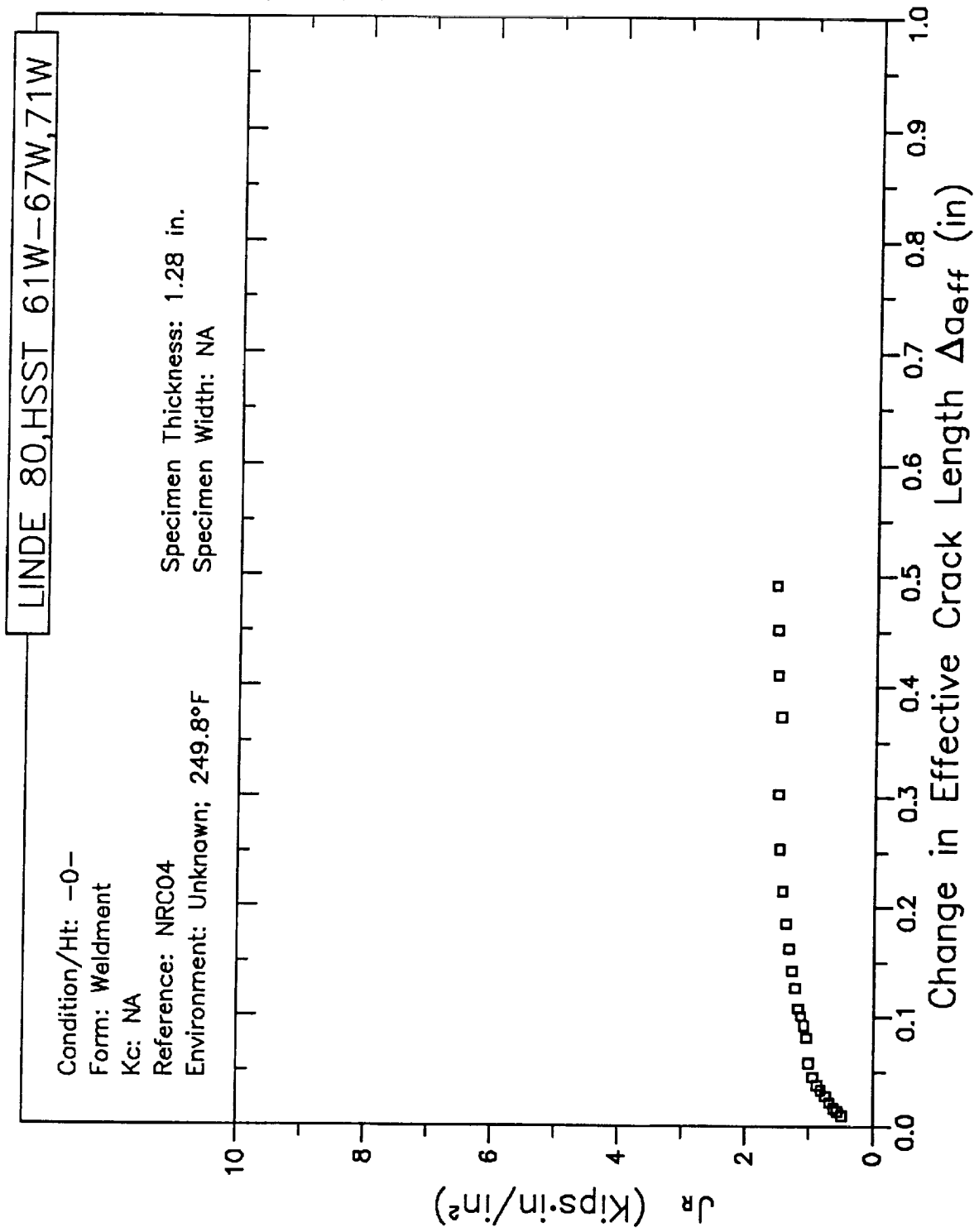
LINDE 80,HSST 61W-67W,71W

Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 249.8°F

Specimen Thickness: 0.8 in.  
Specimen Width: NA



# RESISTANCE CURVE

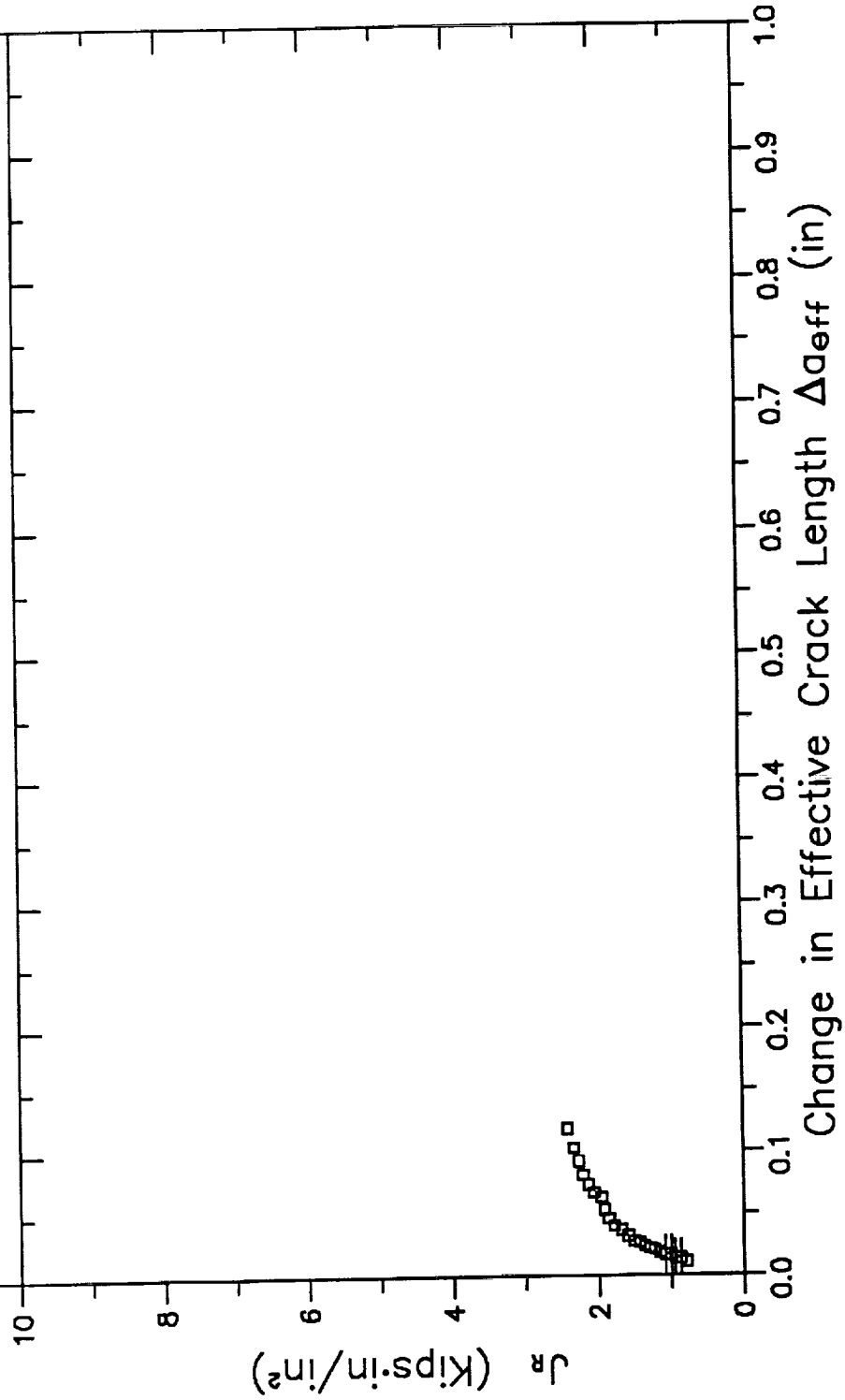


# RESISTANCE CURVE

LINDE 80,HSST 61W-67W,71W

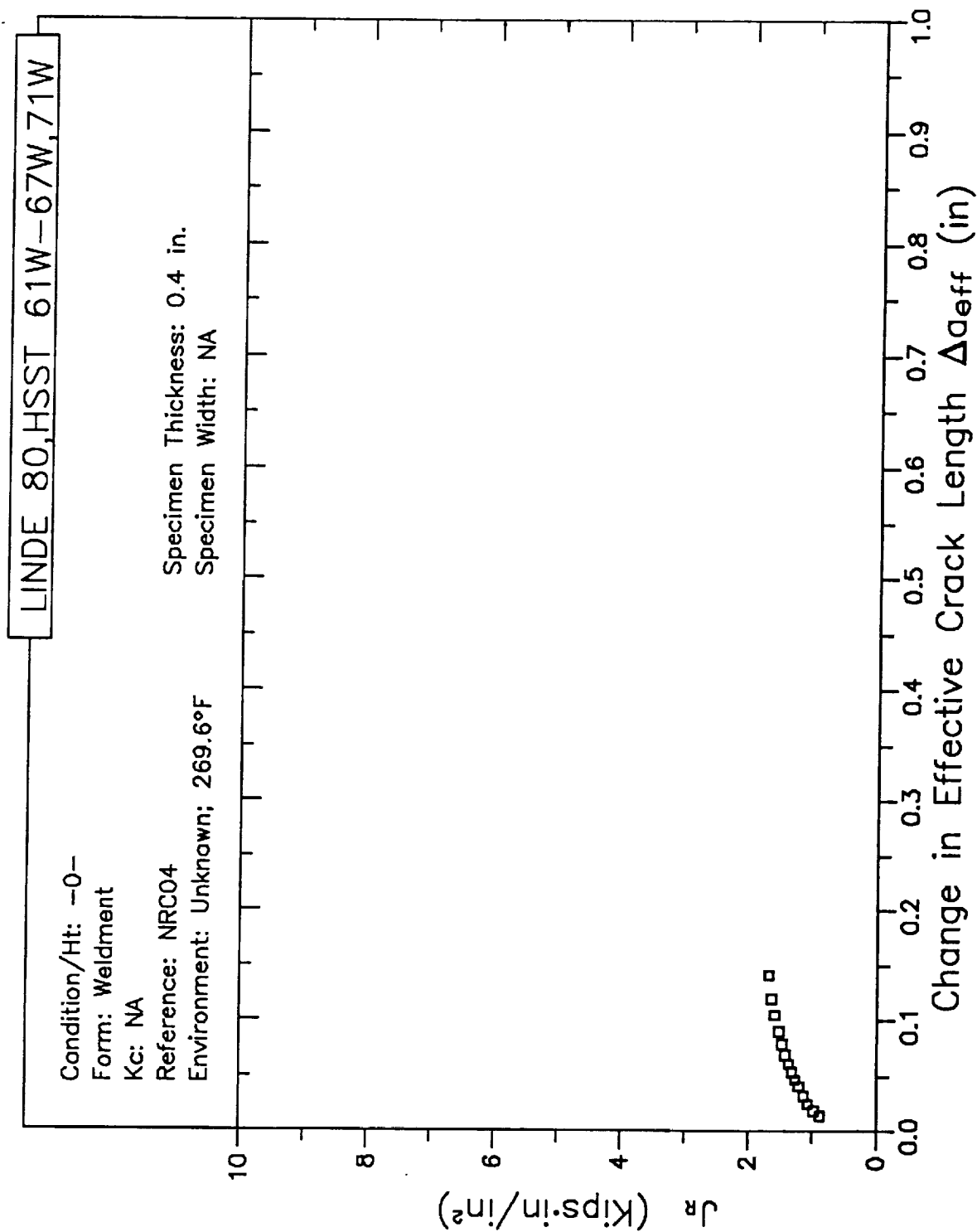
Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 269.6°F

Specimen Thickness: 0.4 in.  
Specimen Width: NA





# RESISTANCE CURVE

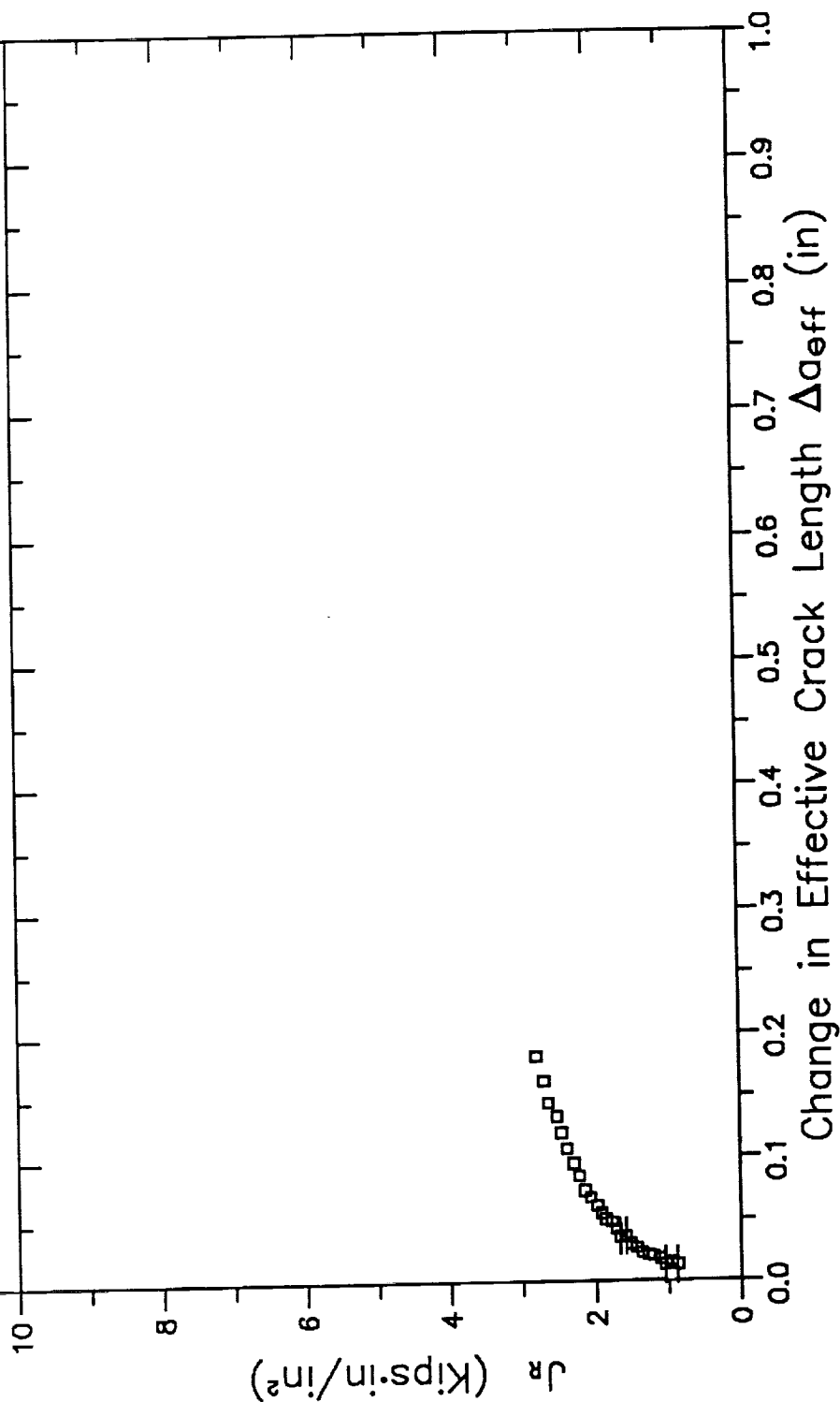


# RESISTANCE CURVE

LINDE 80,HSST 61W-67W,71W

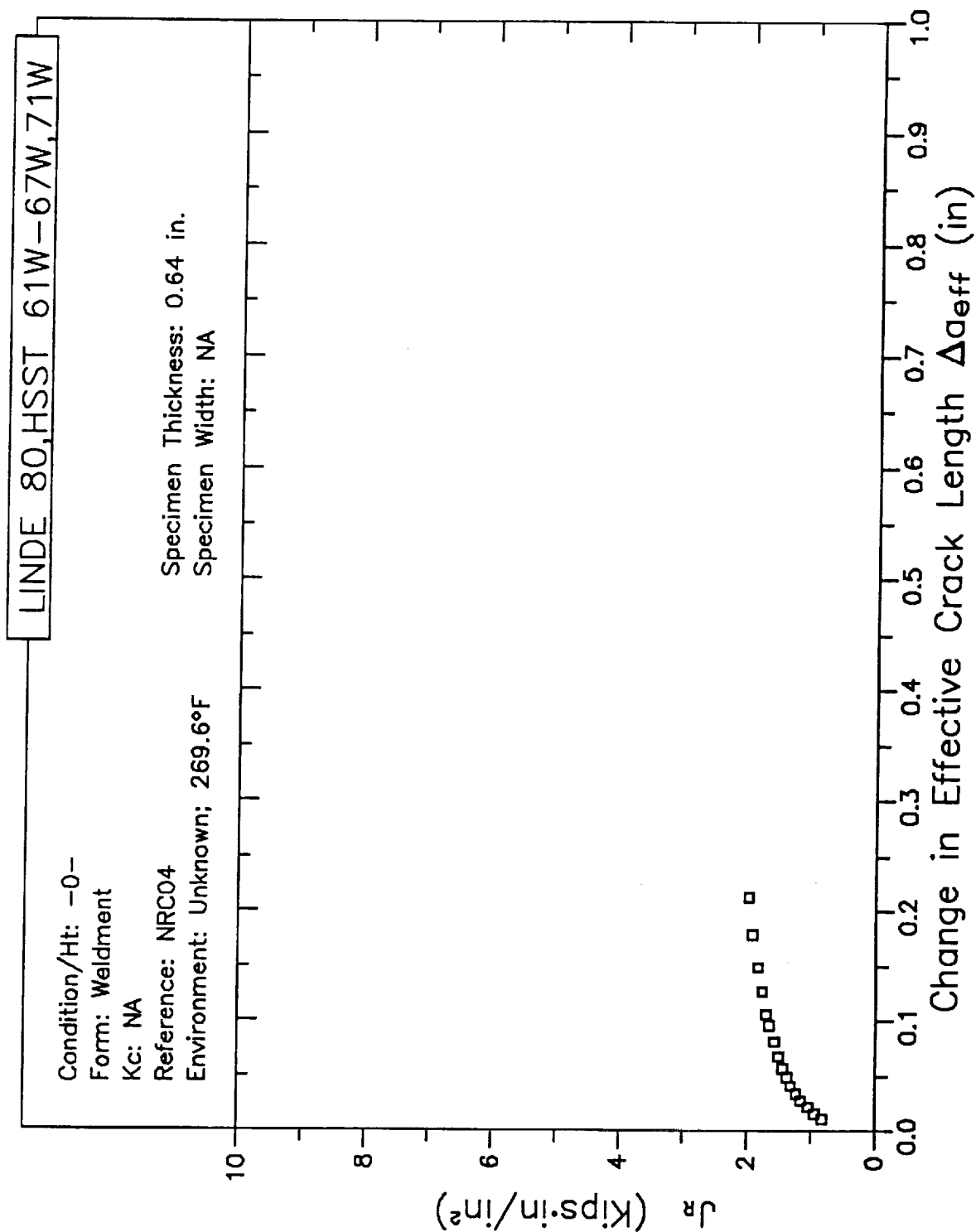
Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 269.6°F

Specimen Thickness: 0.64 in.  
Specimen Width: NA



B3-298

# RESISTANCE CURVE

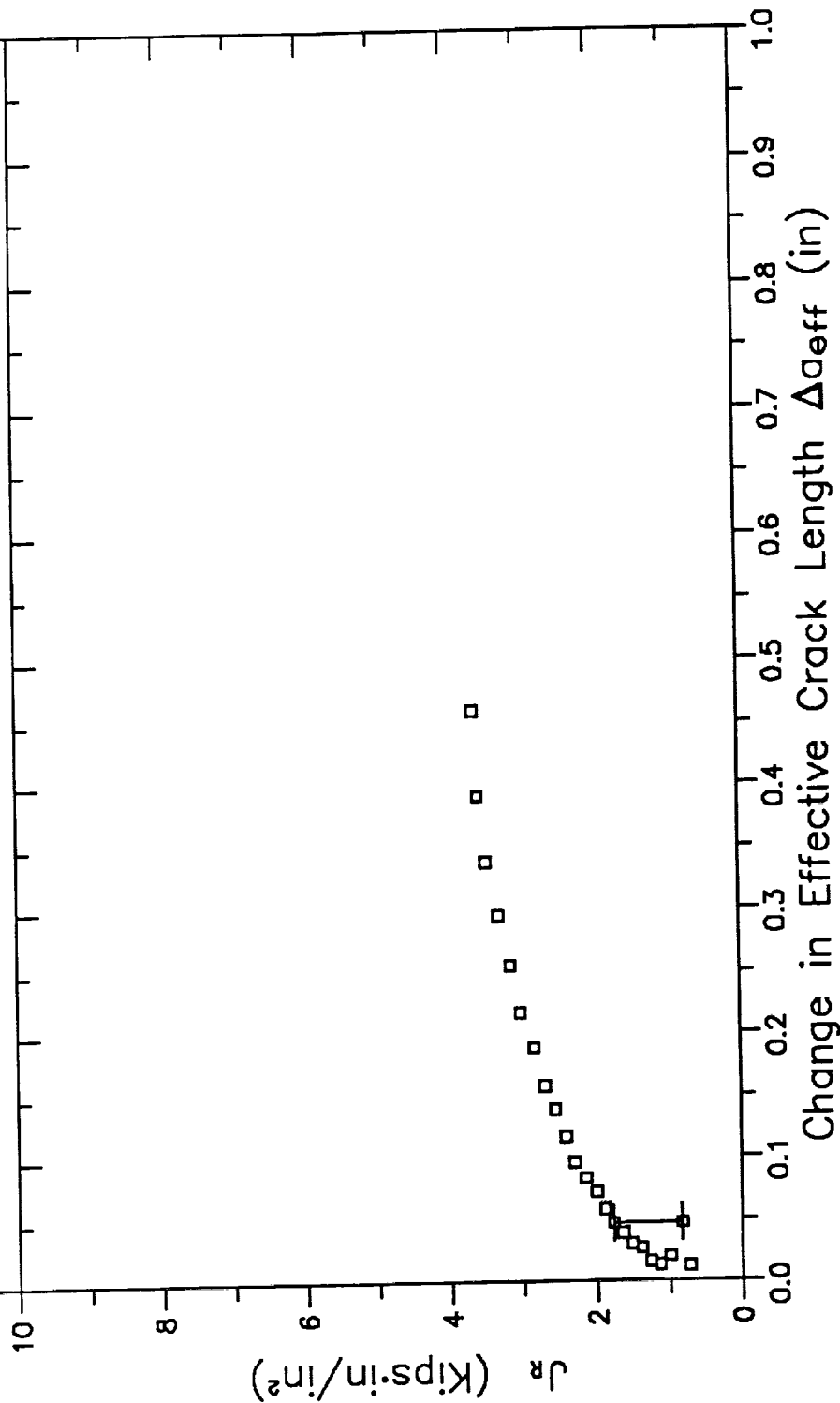


# RESISTANCE CURVE

LINDE 80,HSST 61W-67W,71W

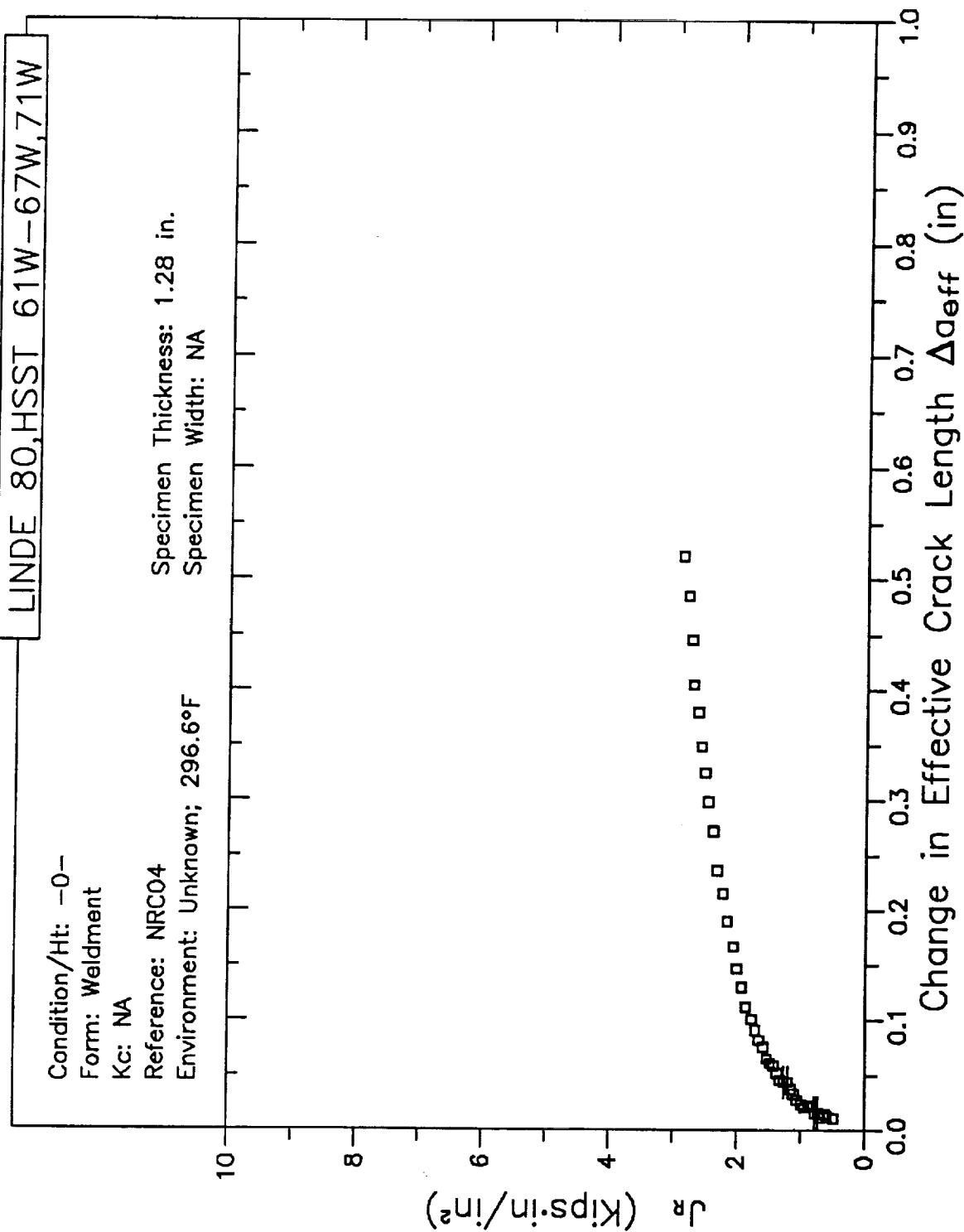
Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 269.6°F

Specimen Thickness: 1.28 in.  
Specimen Width: NA



B3-300

# RESISTANCE CURVE

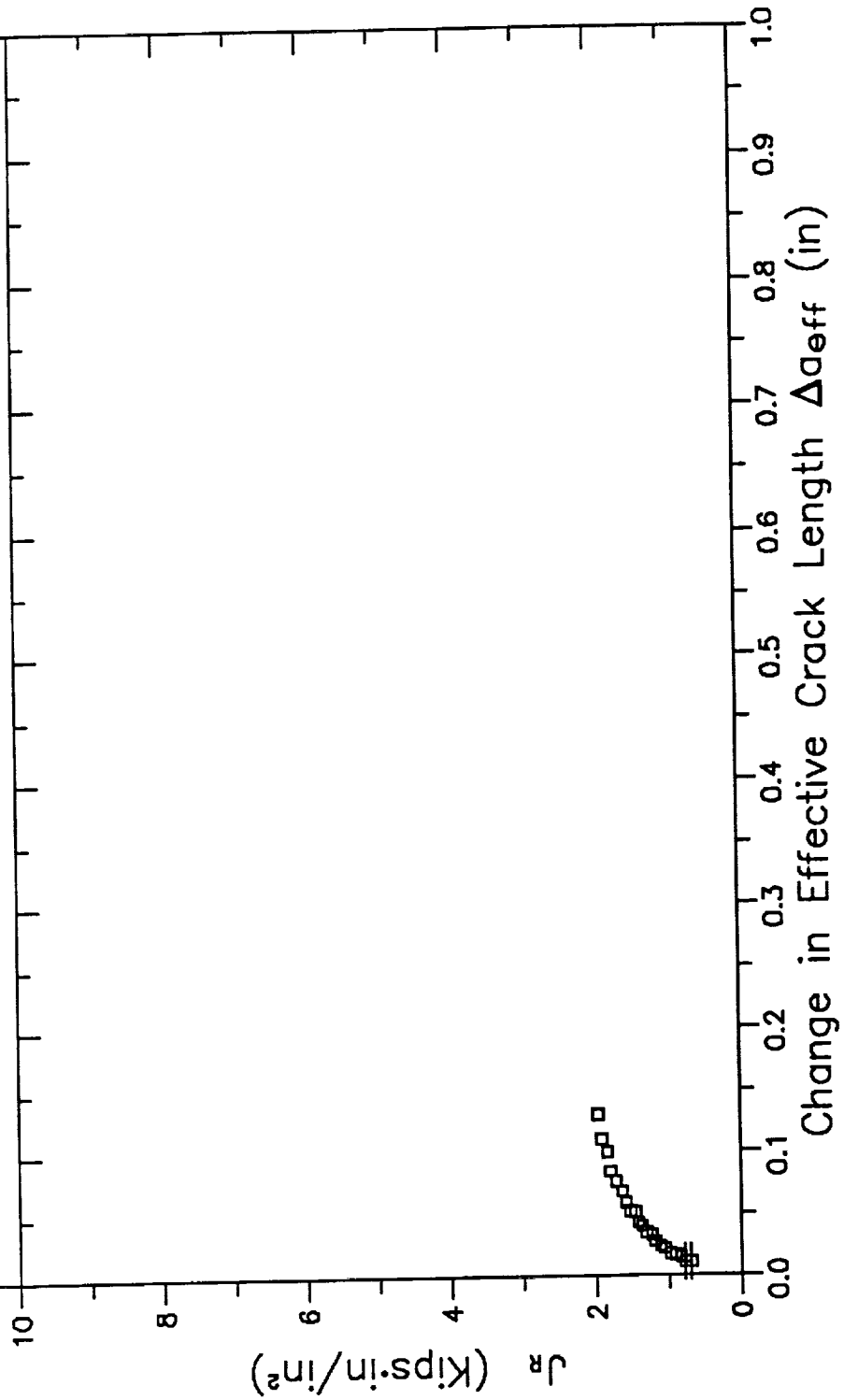


# RESISTANCE CURVE

LINDE 80,HSST 61W-67W,71W

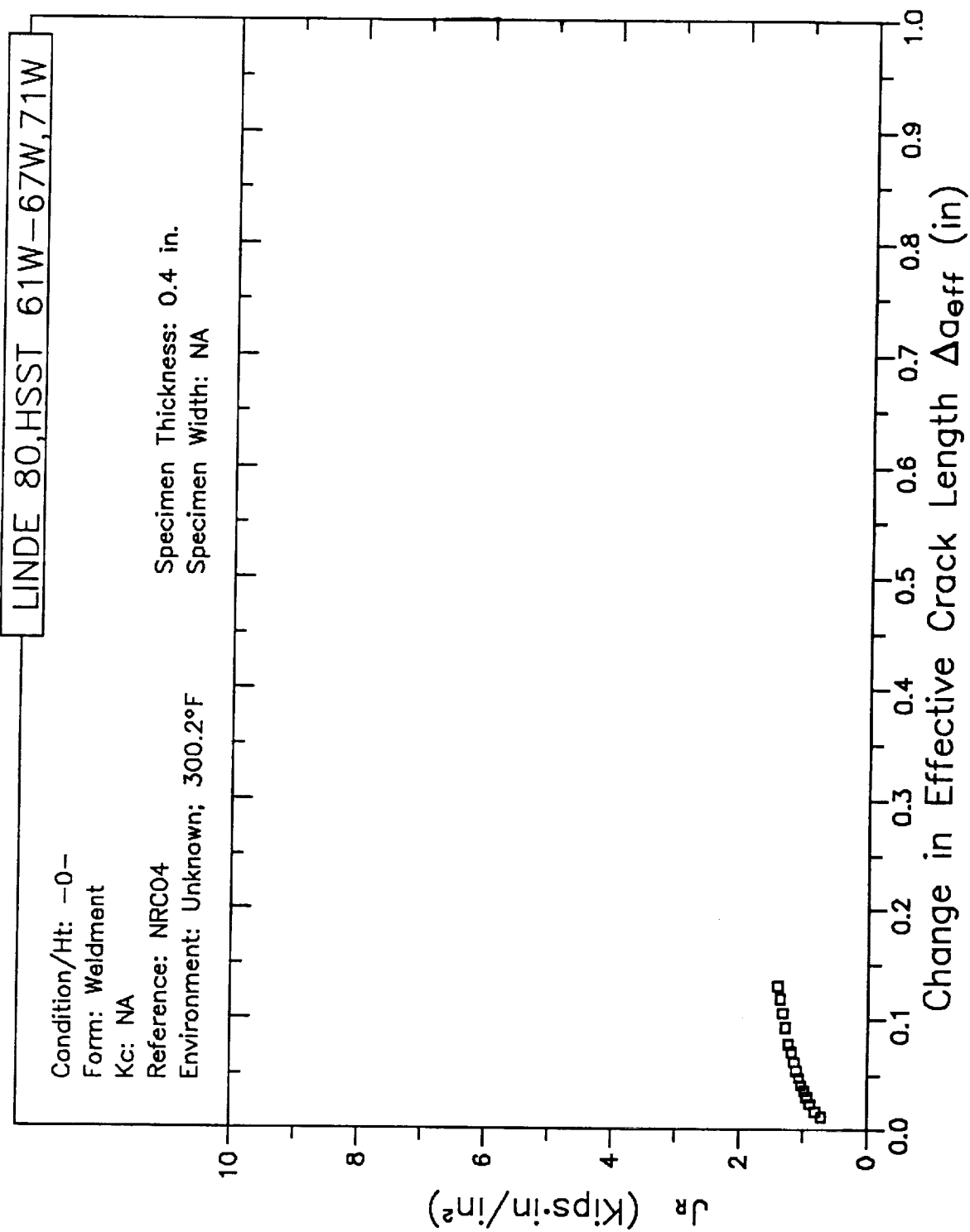
Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 300.2°F

Specimen Thickness: 0.4 in.  
Specimen Width: NA



B3-302

# RESISTANCE CURVE

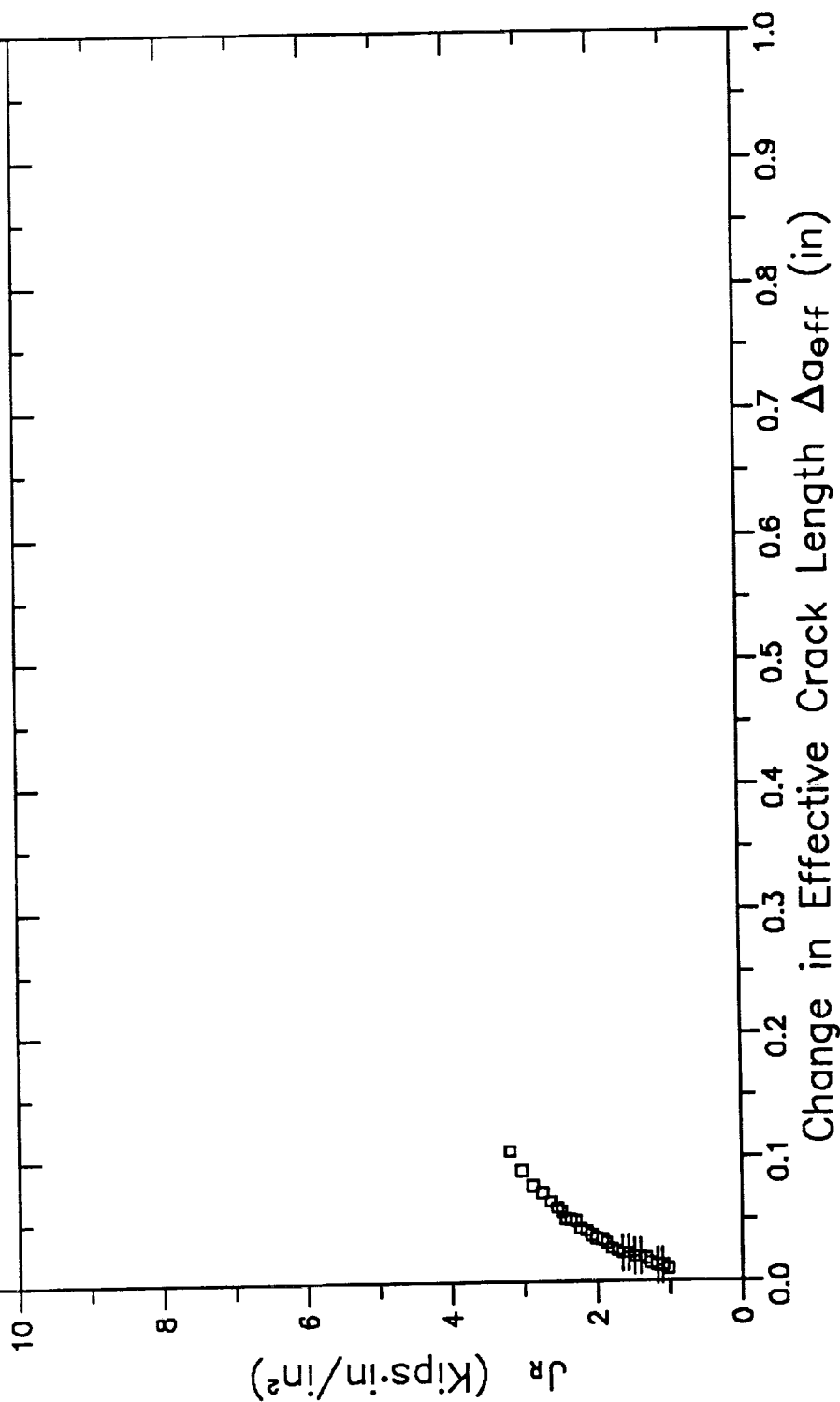


# RESISTANCE CURVE

LINDE 80,HSST 61W-67W,71W

Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 300.2°F

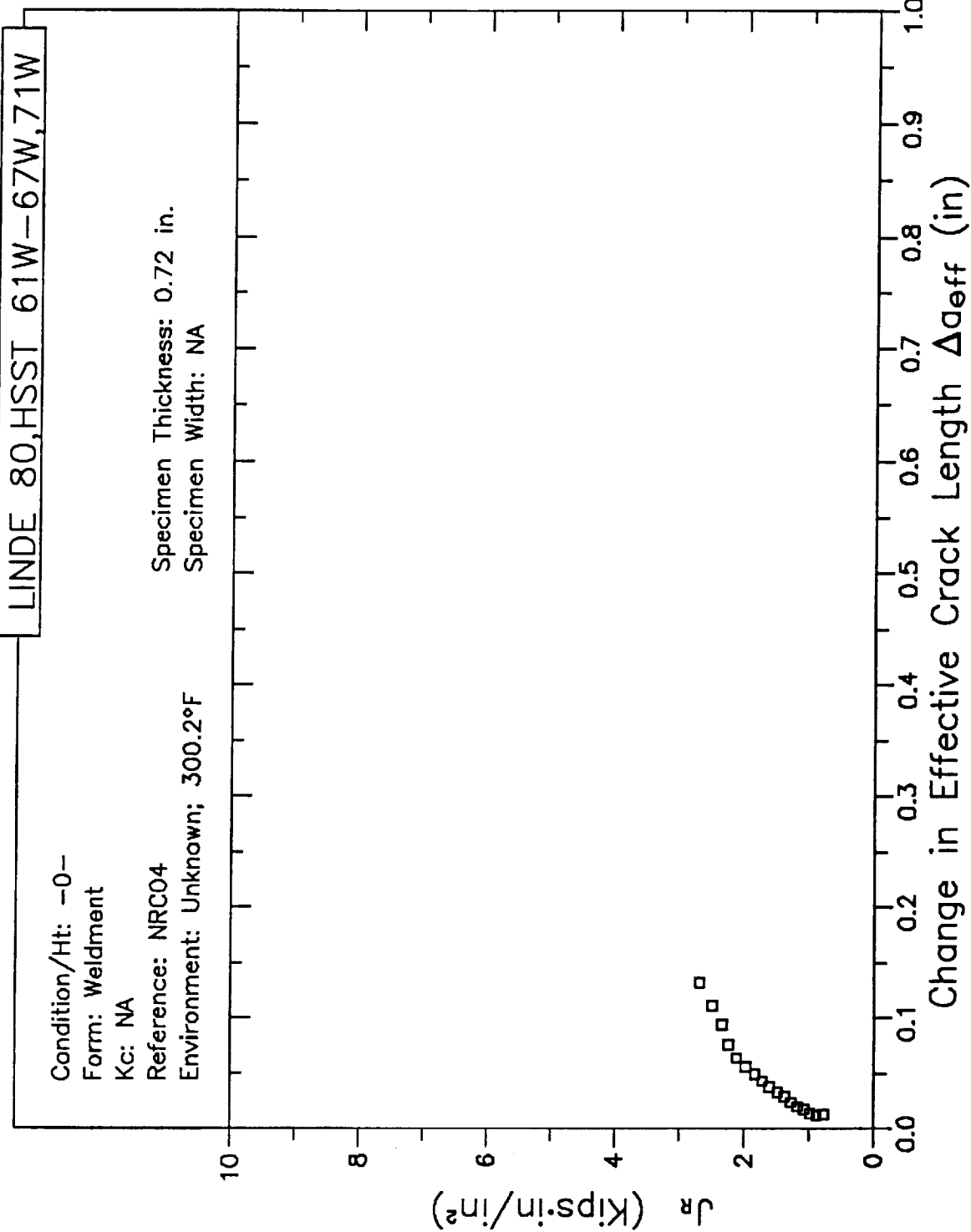
Specimen Thickness: 0.64 in.  
Specimen Width: NA



B3-304



# RESISTANCE CURVE

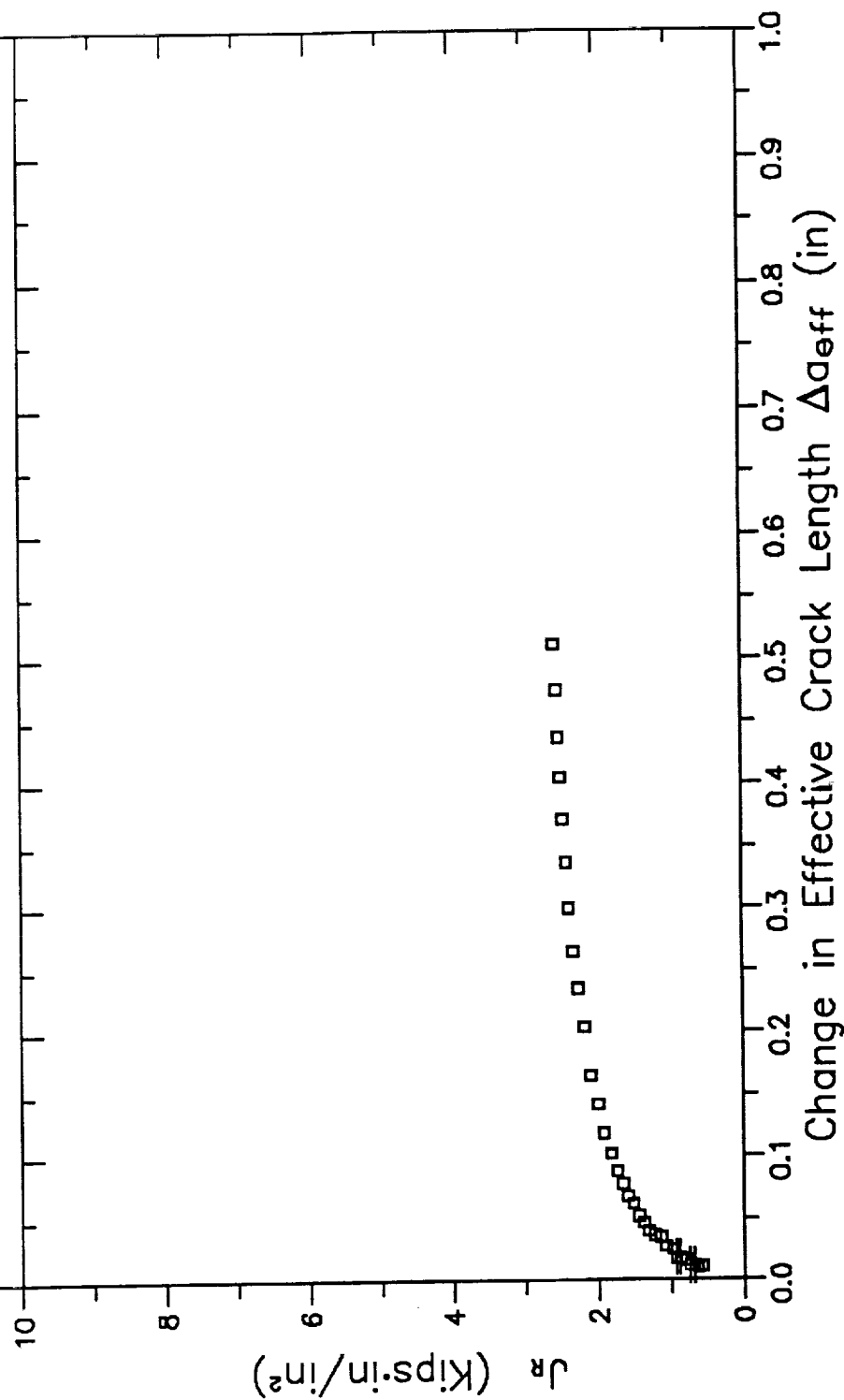


# RESISTANCE CURVE

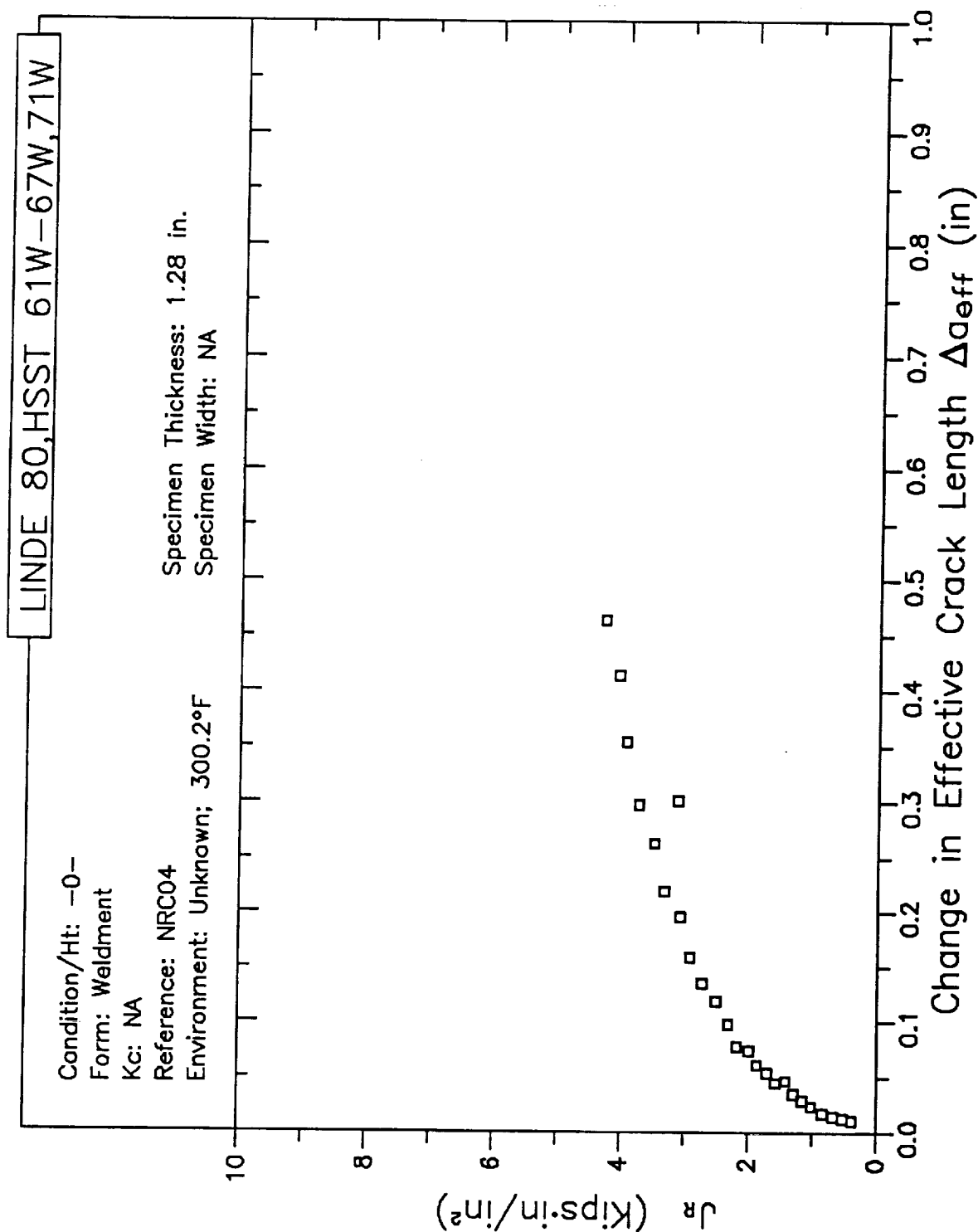
LINDE 80,HSST 61W-67W,71W

Condition/Ht: -0-  
Form: Waldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 300.2°F

Specimen Thickness: 1.28 in.  
Specimen Width: NA



# RESISTANCE CURVE



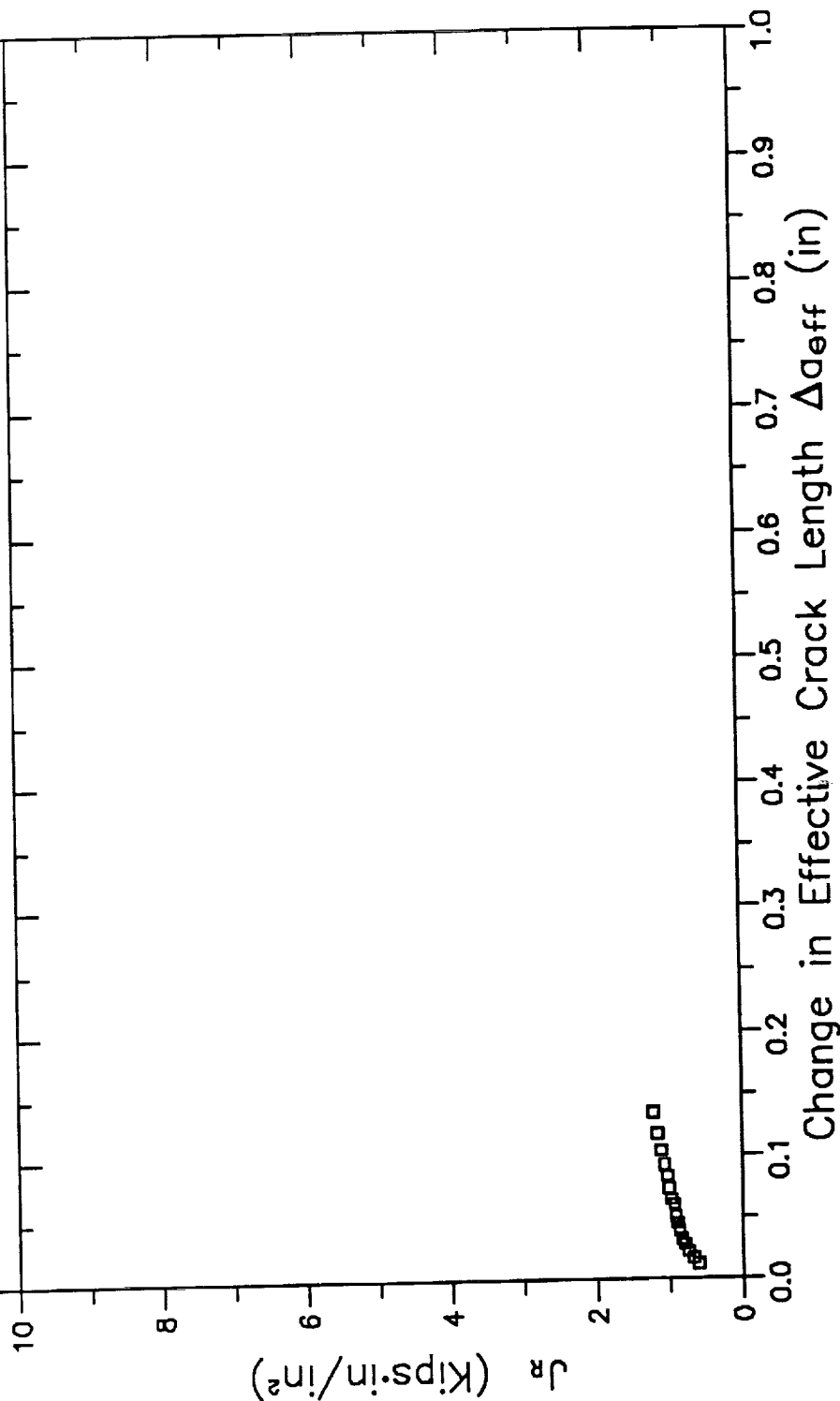
B3-307

# RESISTANCE CURVE

LINDE 80, HSST 61W-67W, 71W

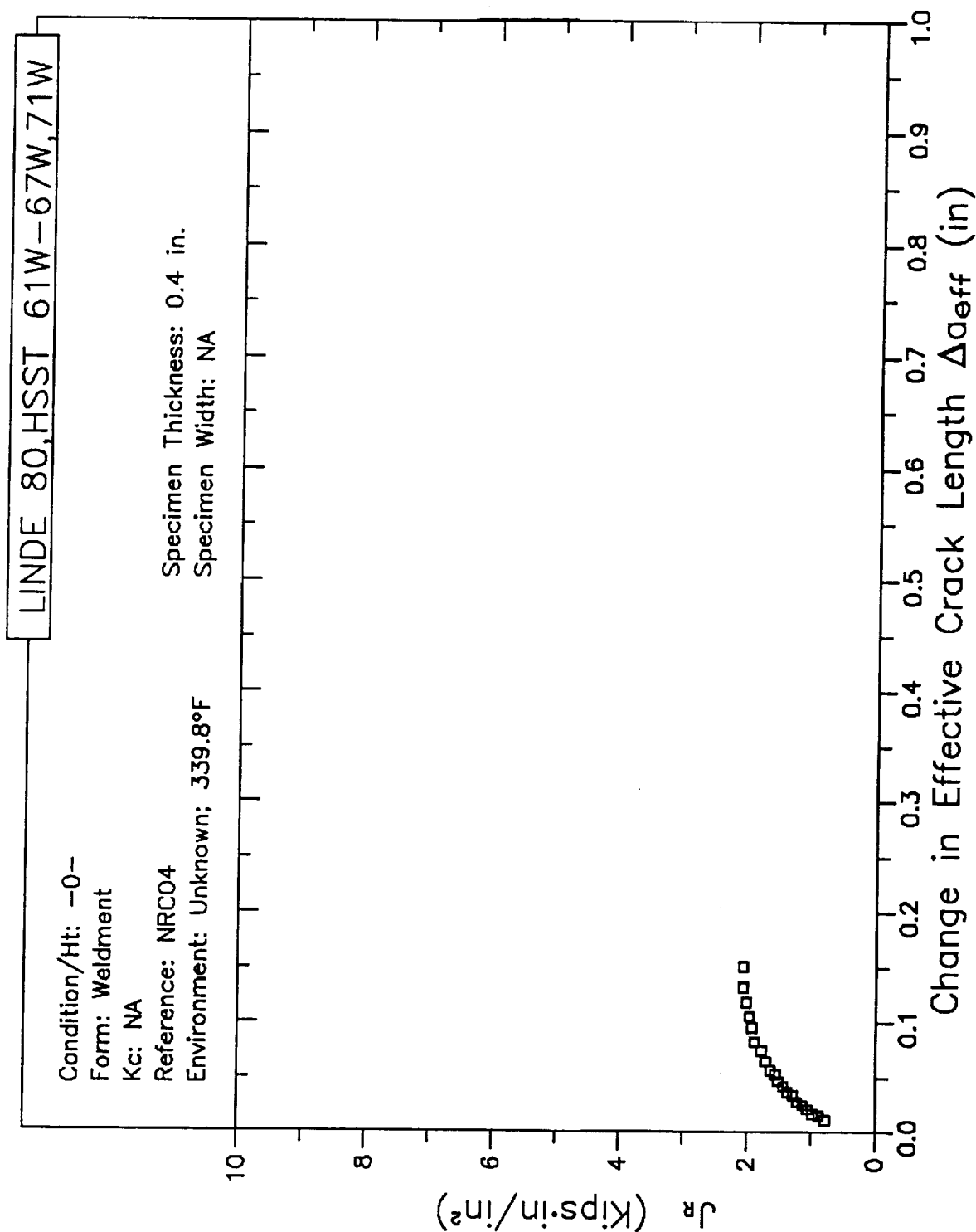
Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 339.8°F

Specimen Thickness: 0.4 in.  
Specimen Width: NA



B3-308

# RESISTANCE CURVE

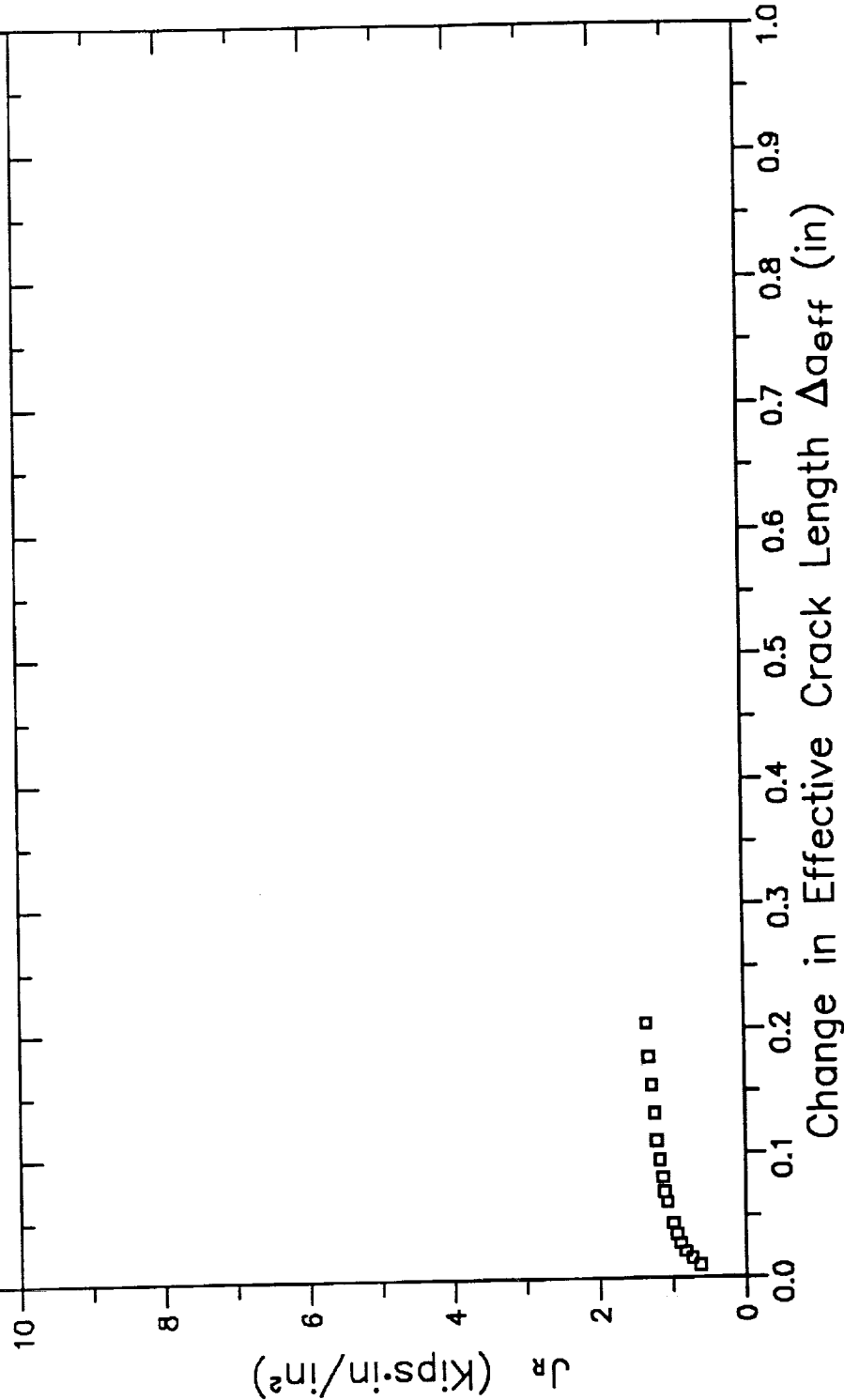


# RESISTANCE CURVE

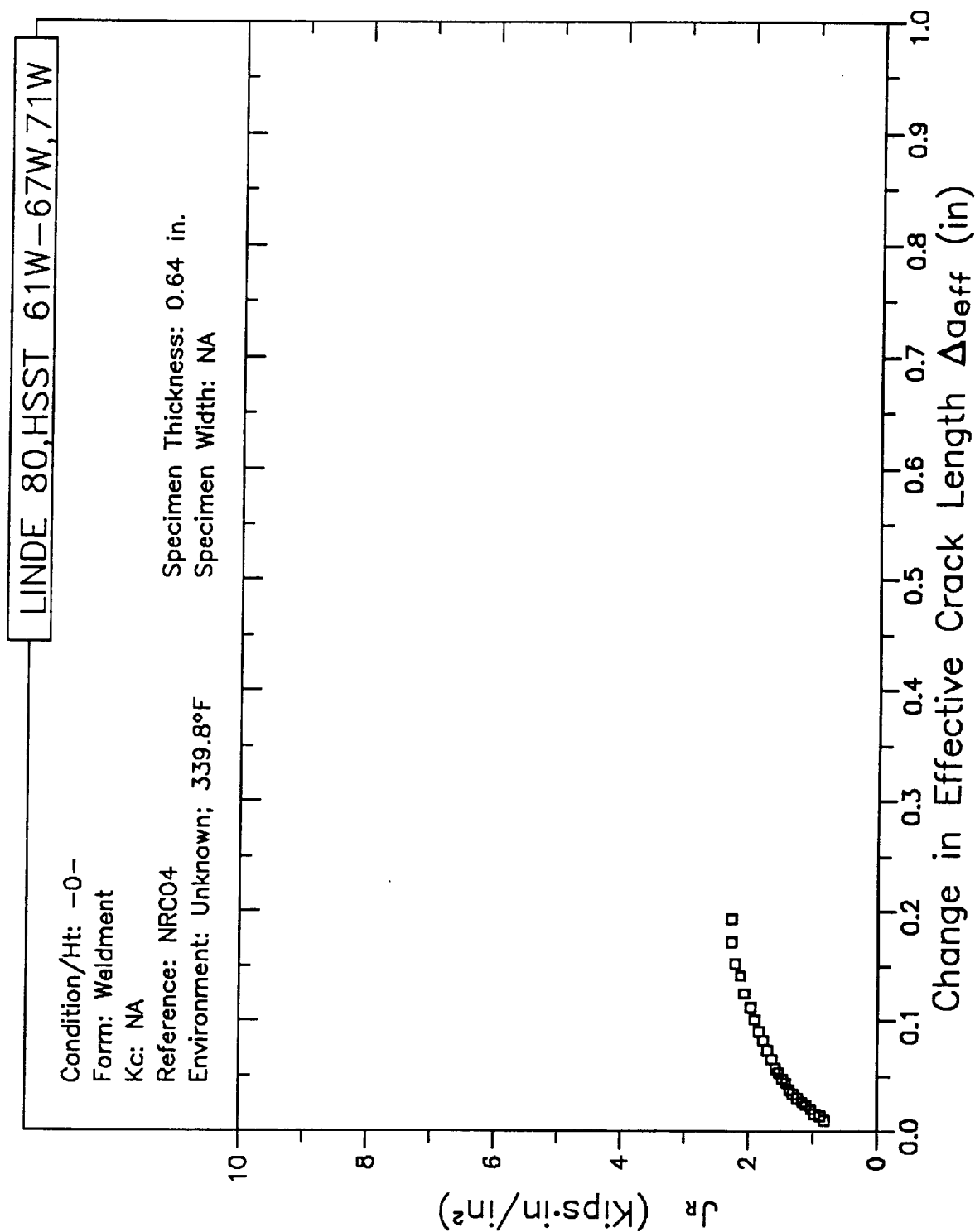
LINDE 80,HSST 61W-67W,71W

Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 339.8°F

Specimen Thickness: 0.64 in.  
Specimen Width: NA



# RESISTANCE CURVE

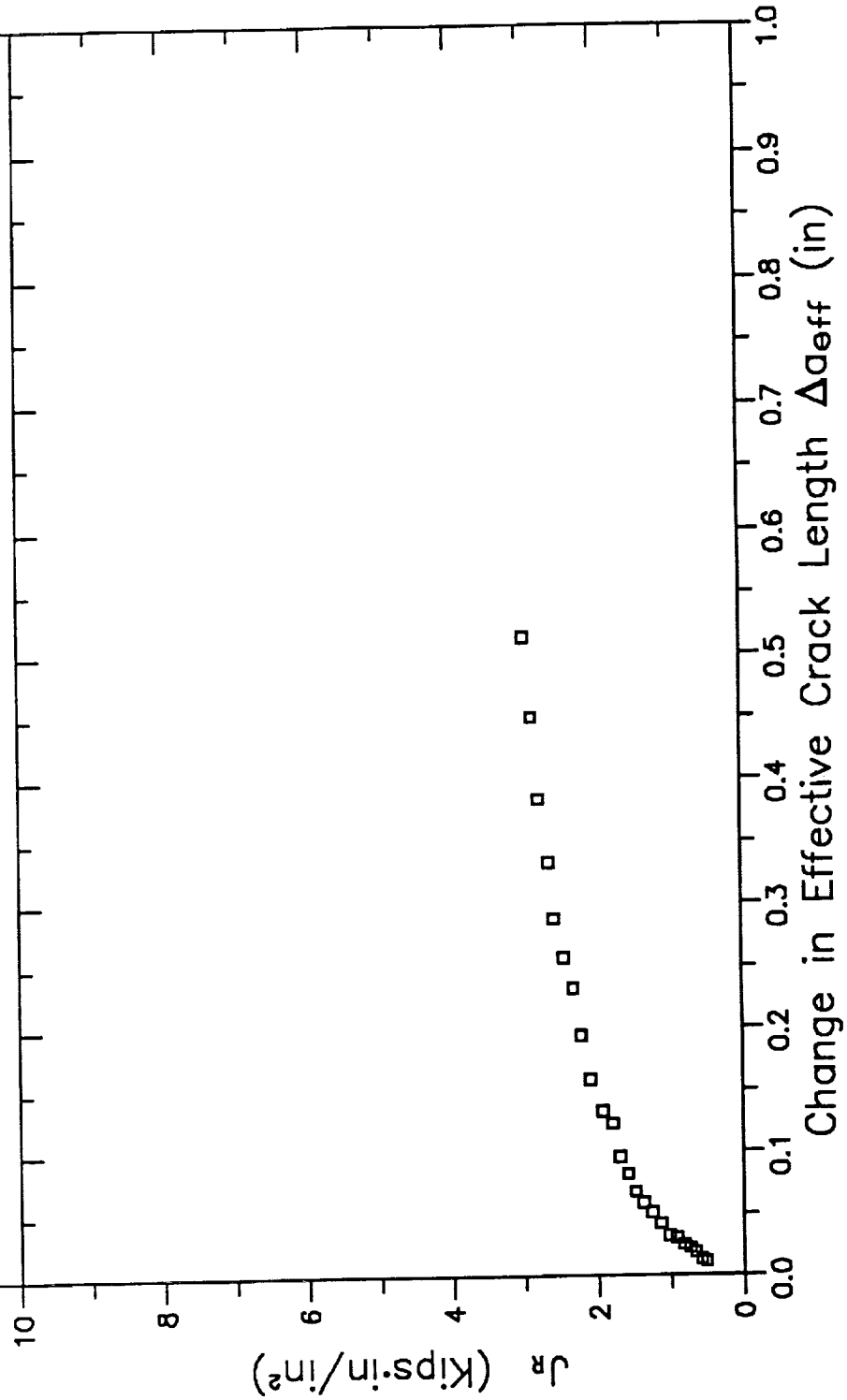


# RESISTANCE CURVE

LINDE 80,HSST 61W-67W,71W

Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 339.8°F

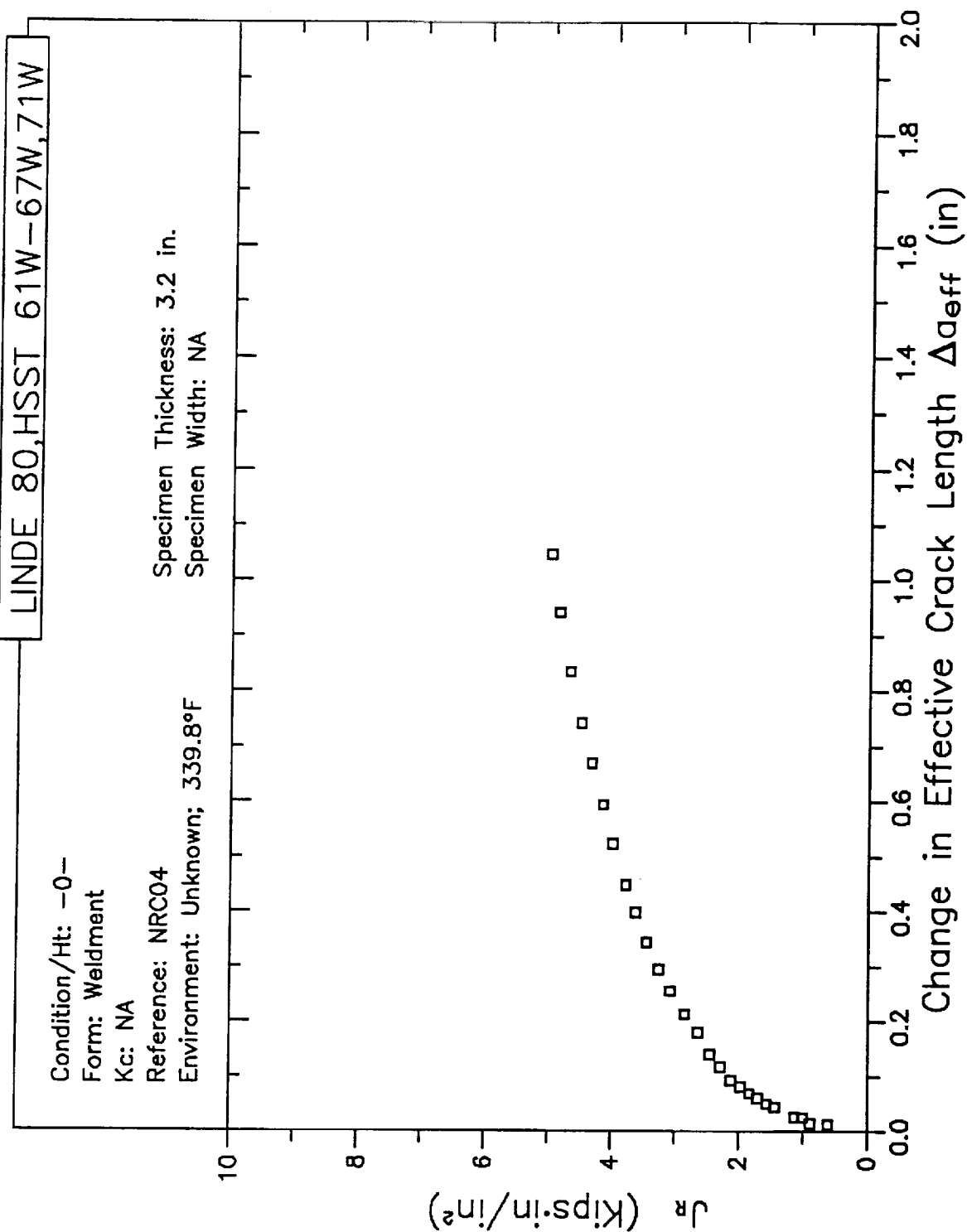
Specimen Thickness: 1.28 in.  
Specimen Width: NA



B3-312



# RESISTANCE CURVE



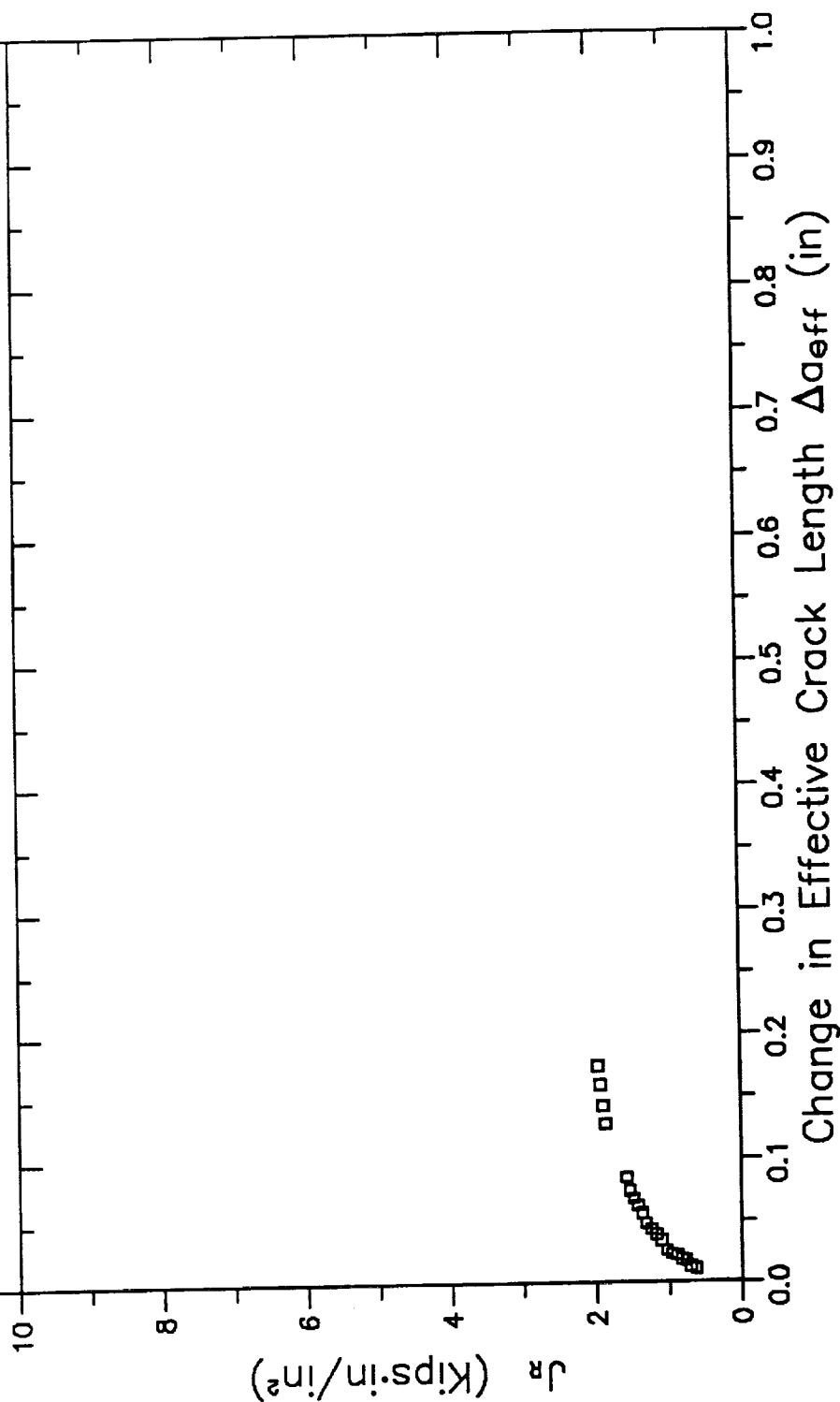
B3-313

# RESISTANCE CURVE

LINDE 80,HSST 61W-67W,71W

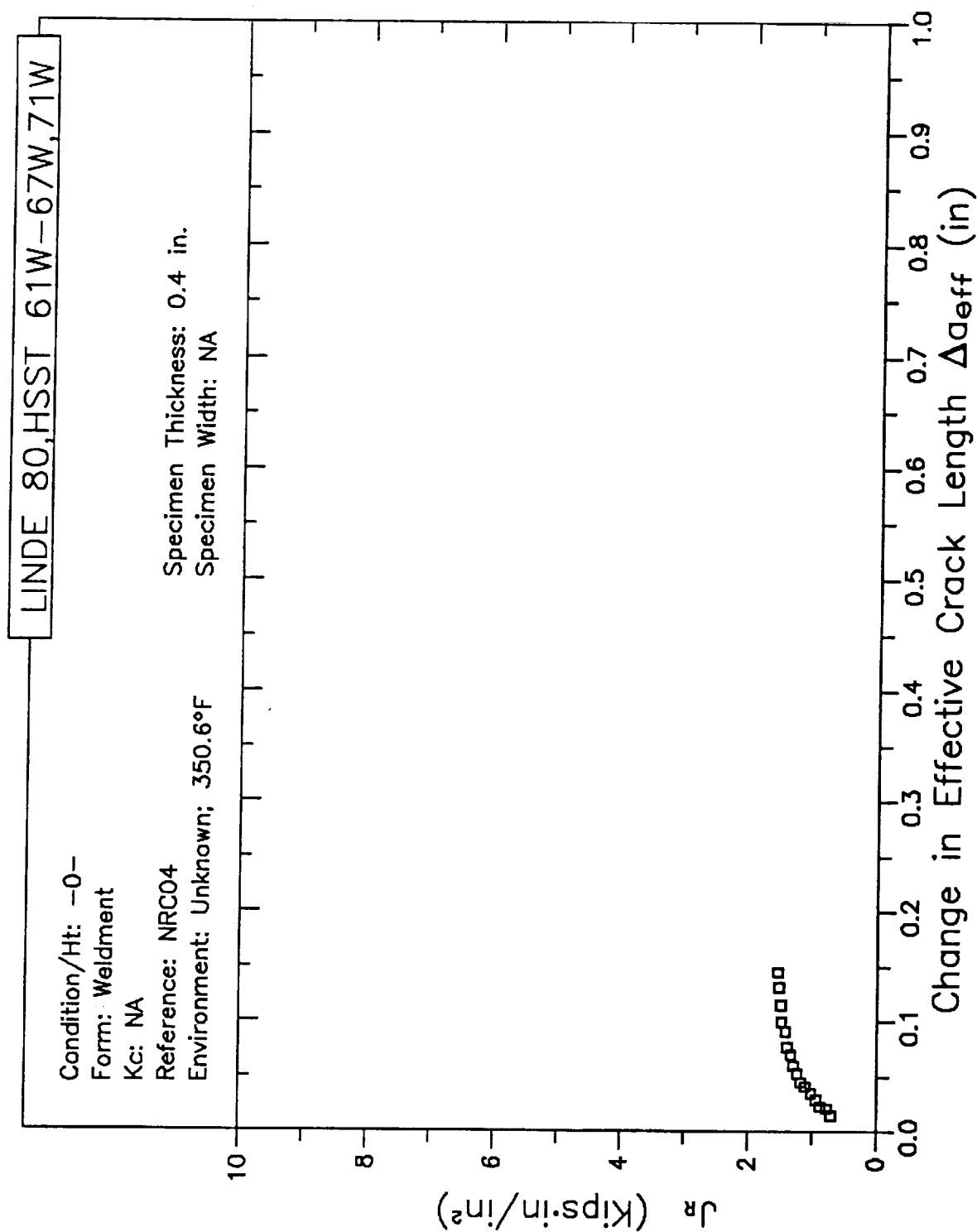
Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 350.6°F

Specimen Thickness: 0.4 in.  
Specimen Width: NA



B3-314

# RESISTANCE CURVE

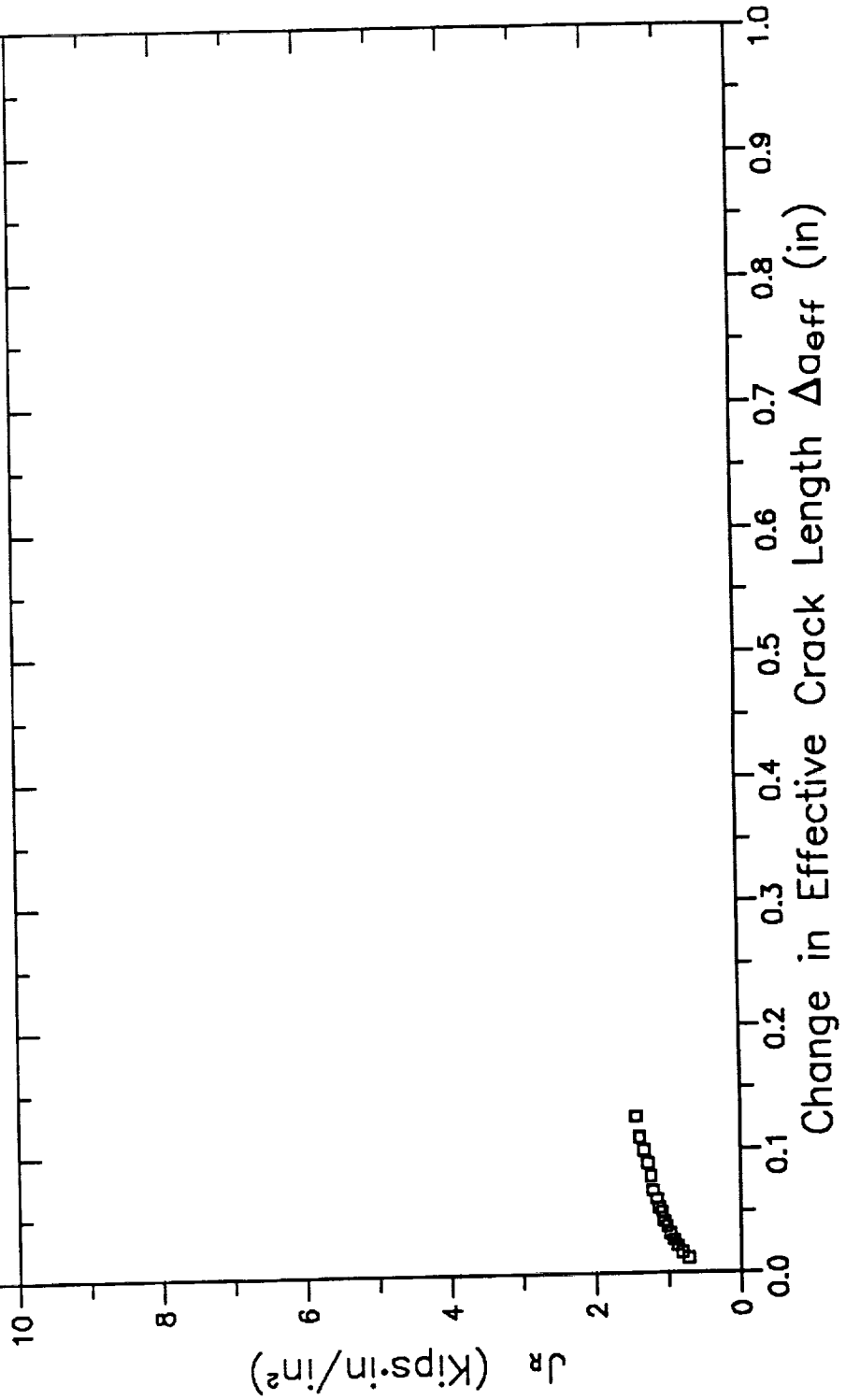


# RESISTANCE CURVE

LINDE 80,HSST 61W-67W,71W

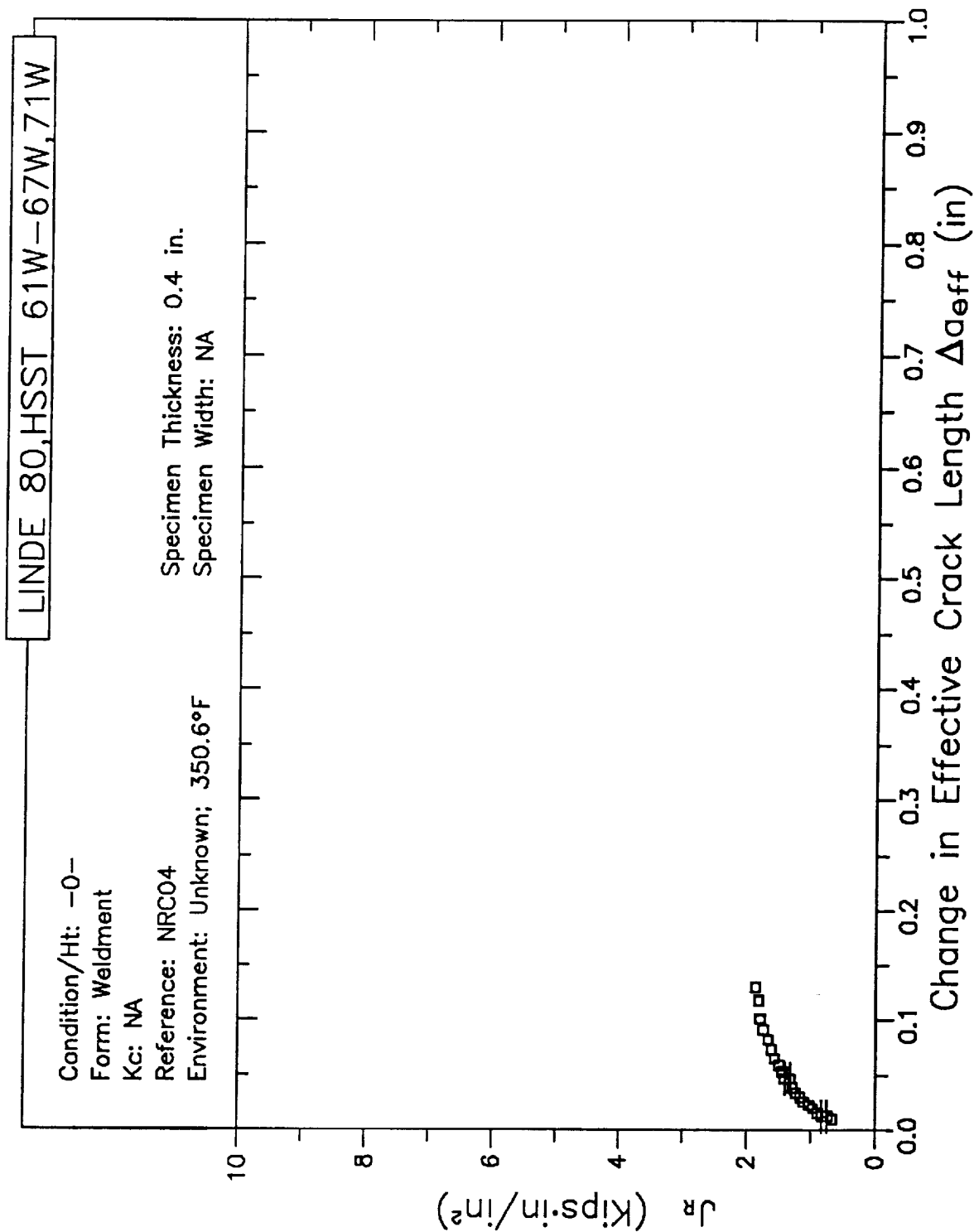
Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 350.6°F

Specimen Thickness: 0.4 in.  
Specimen Width: NA



B3-316

# RESISTANCE CURVE

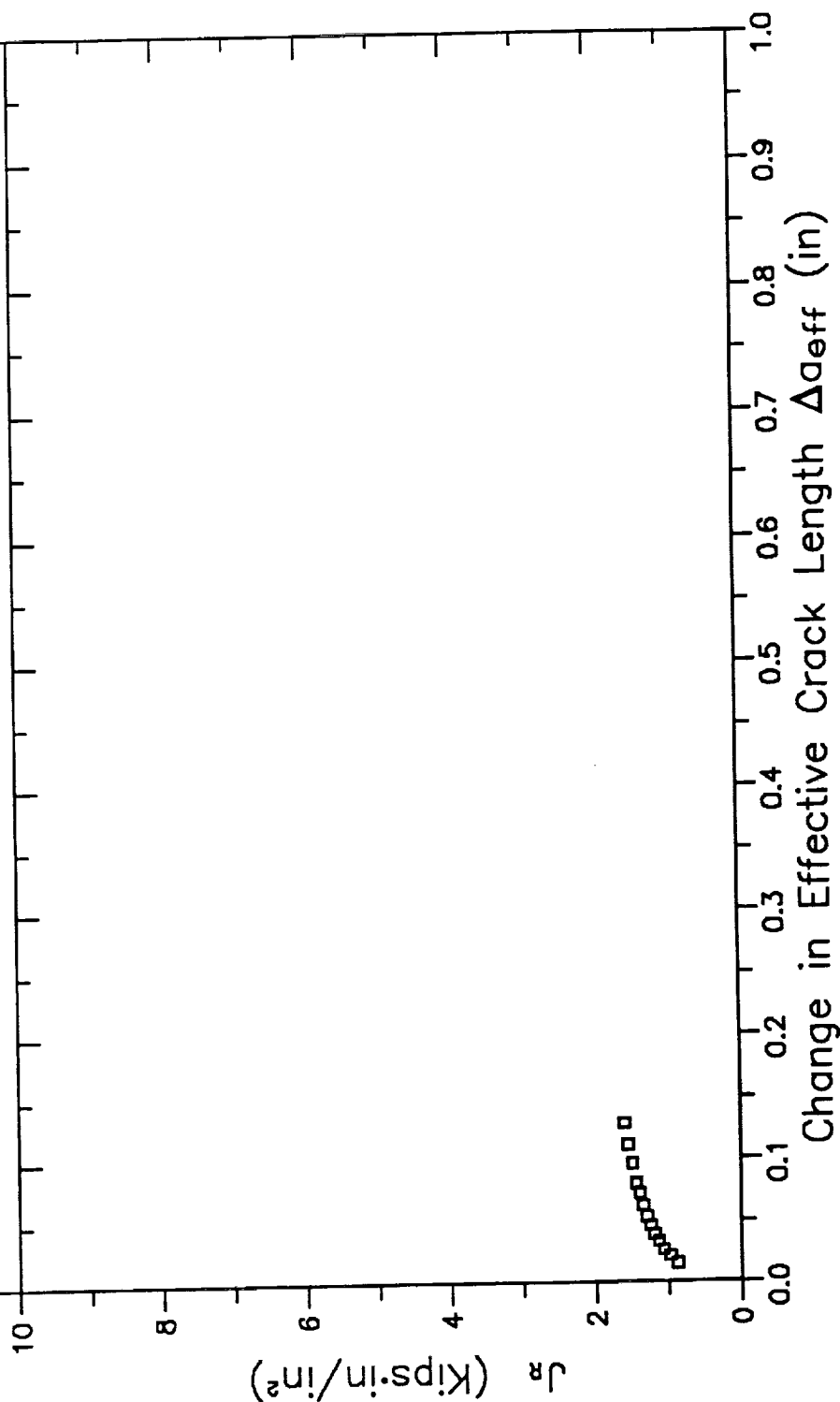


# RESISTANCE CURVE

LINDE 80,HSST 61W-67W,71W

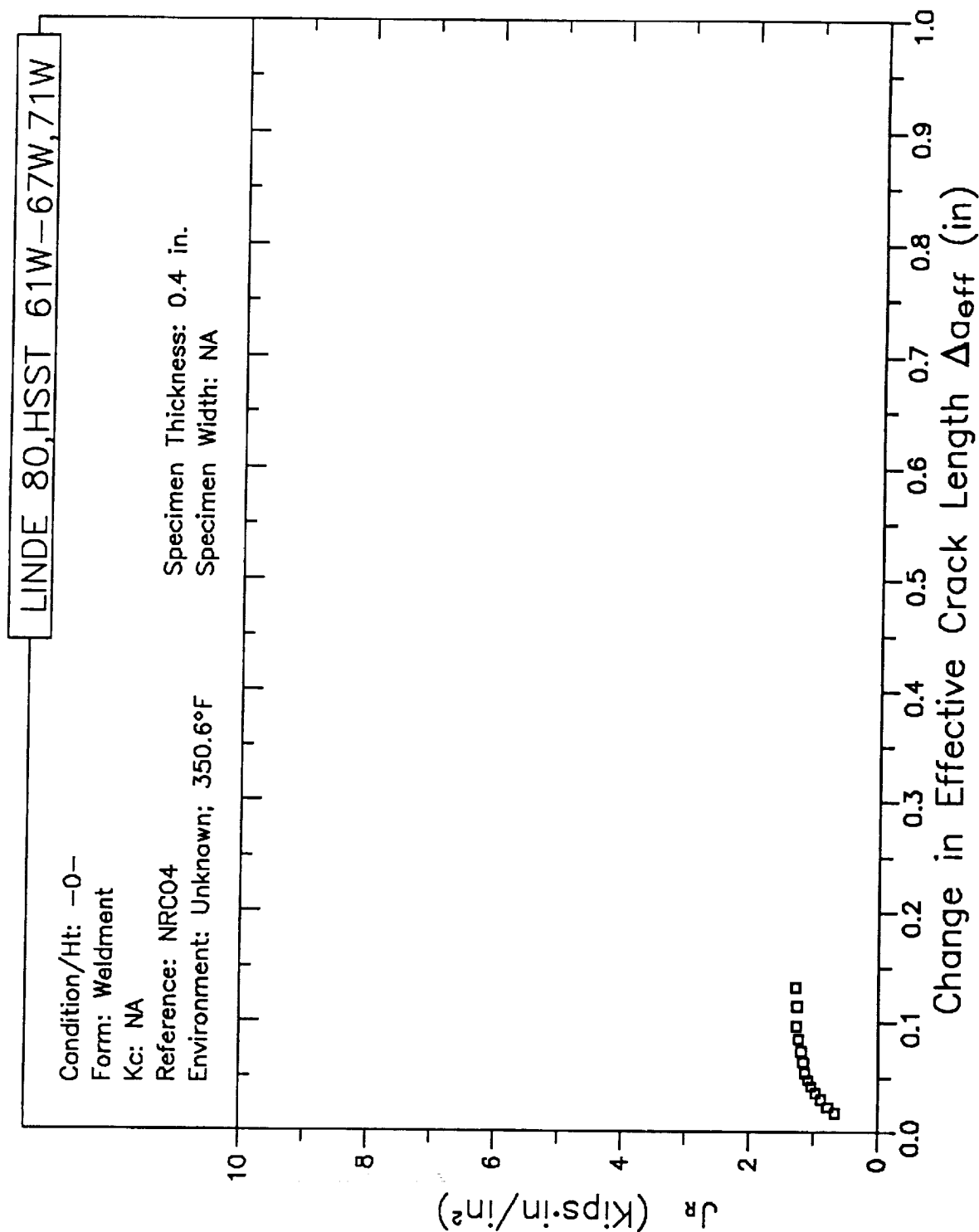
Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 350.6°F

Specimen Thickness: 0.4 in.  
Specimen Width: NA



B3-318

# RESISTANCE CURVE

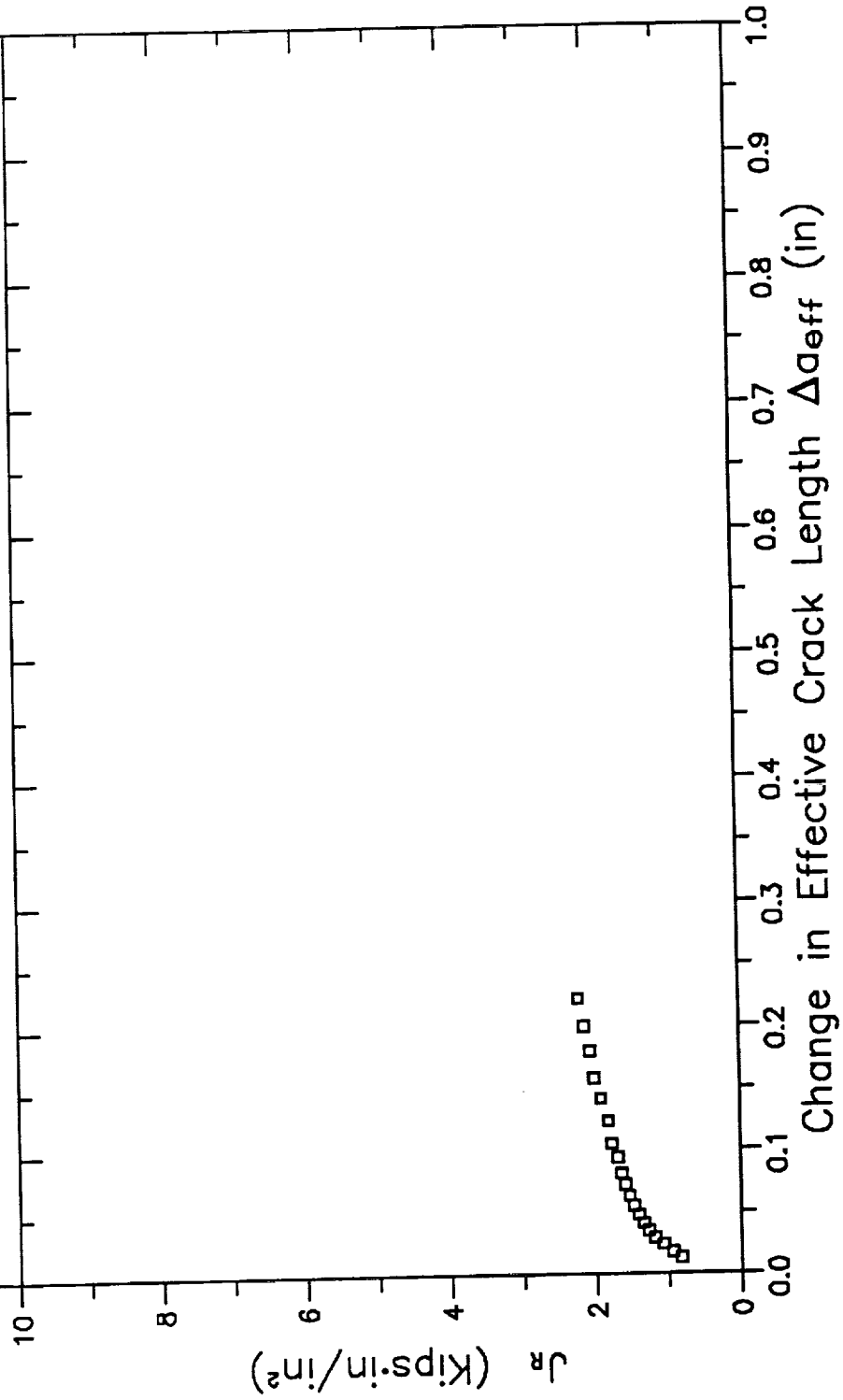


# RESISTANCE CURVE

LINDE 80,HSST 61W-67W,71W

Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 350.6°F

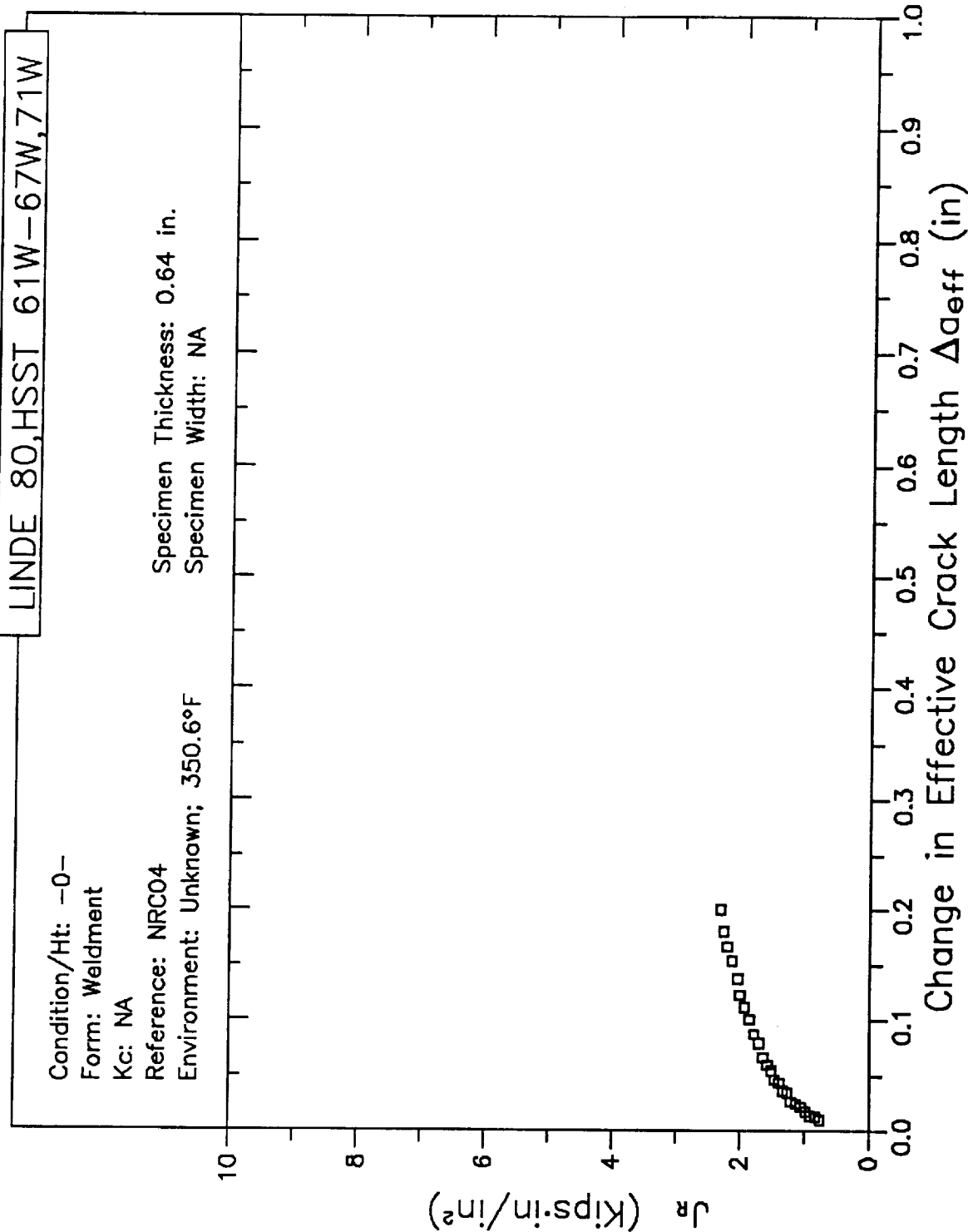
Specimen Thickness: 0.64 in.  
Specimen Width: NA



B3-320



# RESISTANCE CURVE

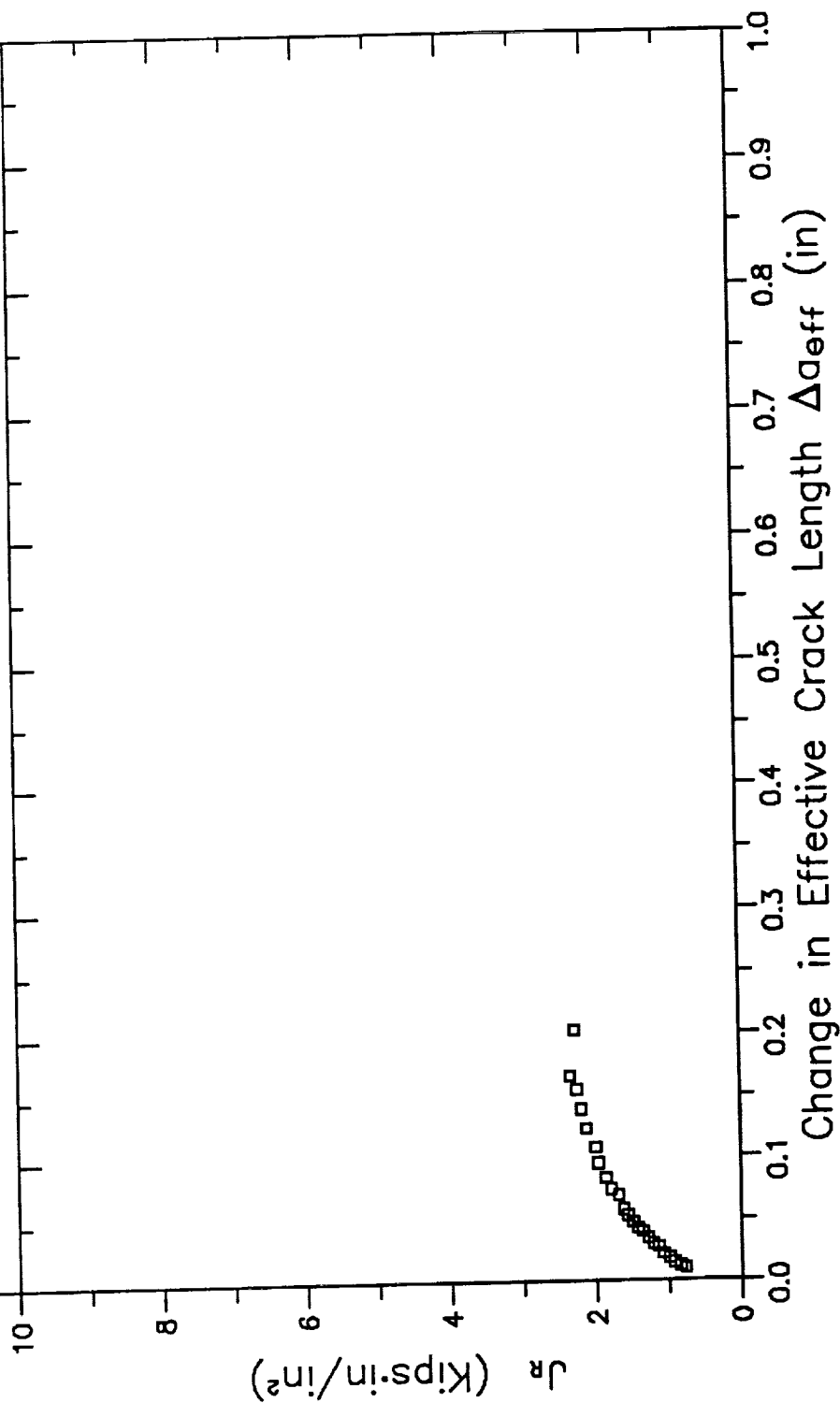


# RESISTANCE CURVE

LINDE 80,HSST 61W-67W,71W

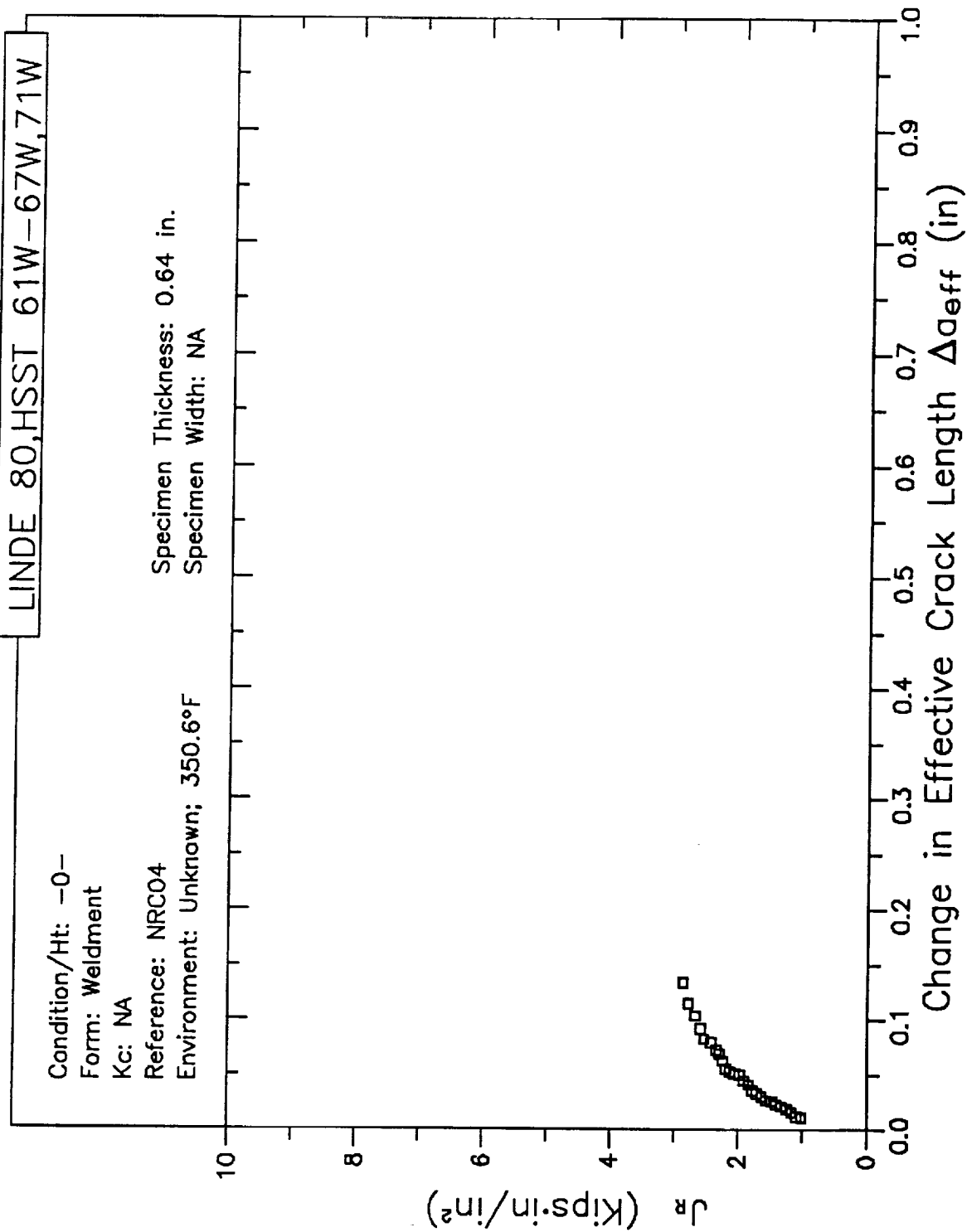
Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 350.6°F

Specimen Thickness: 0.64 in.  
Specimen Width: NA



B3-322

# RESISTANCE CURVE

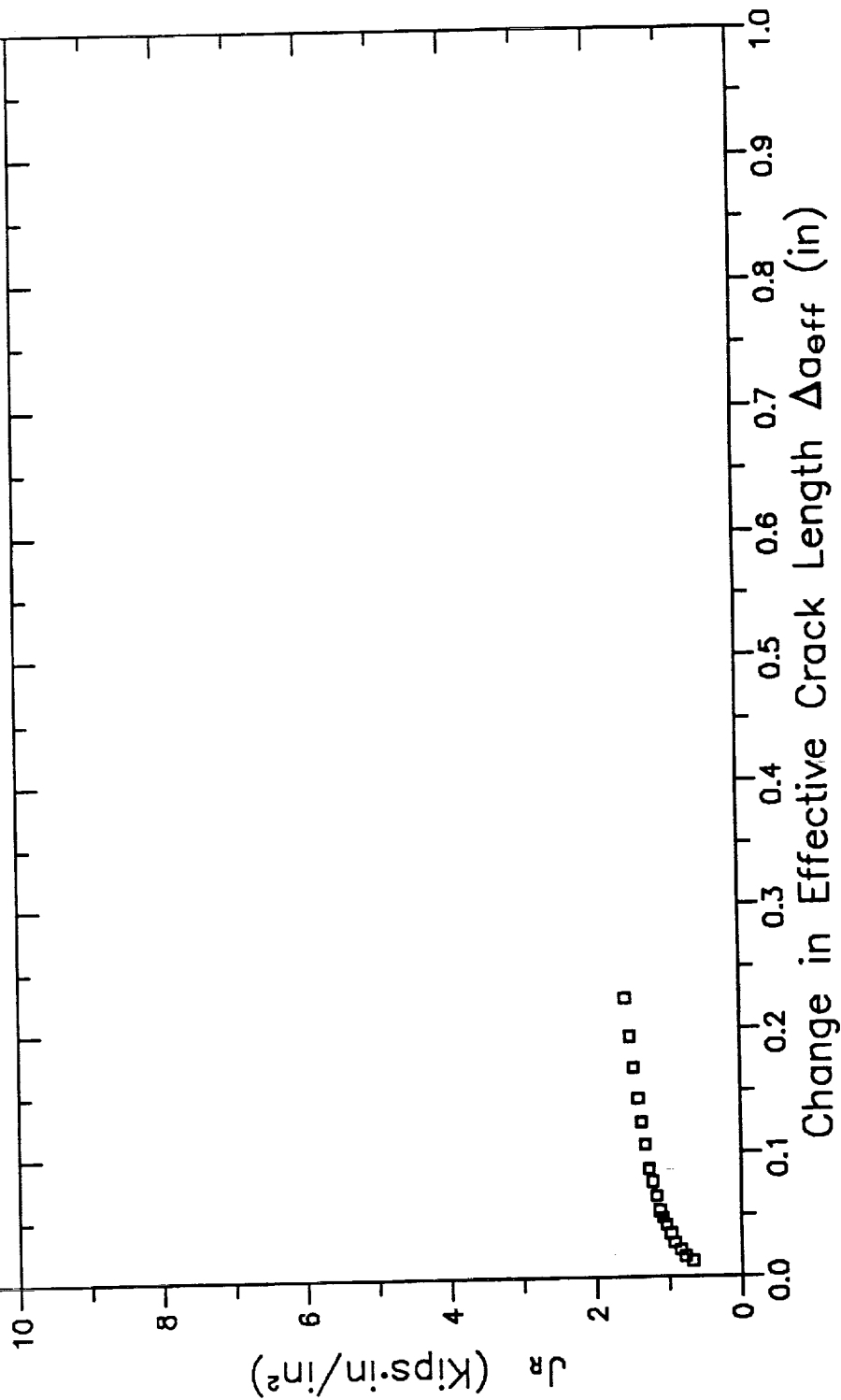


# RESISTANCE CURVE

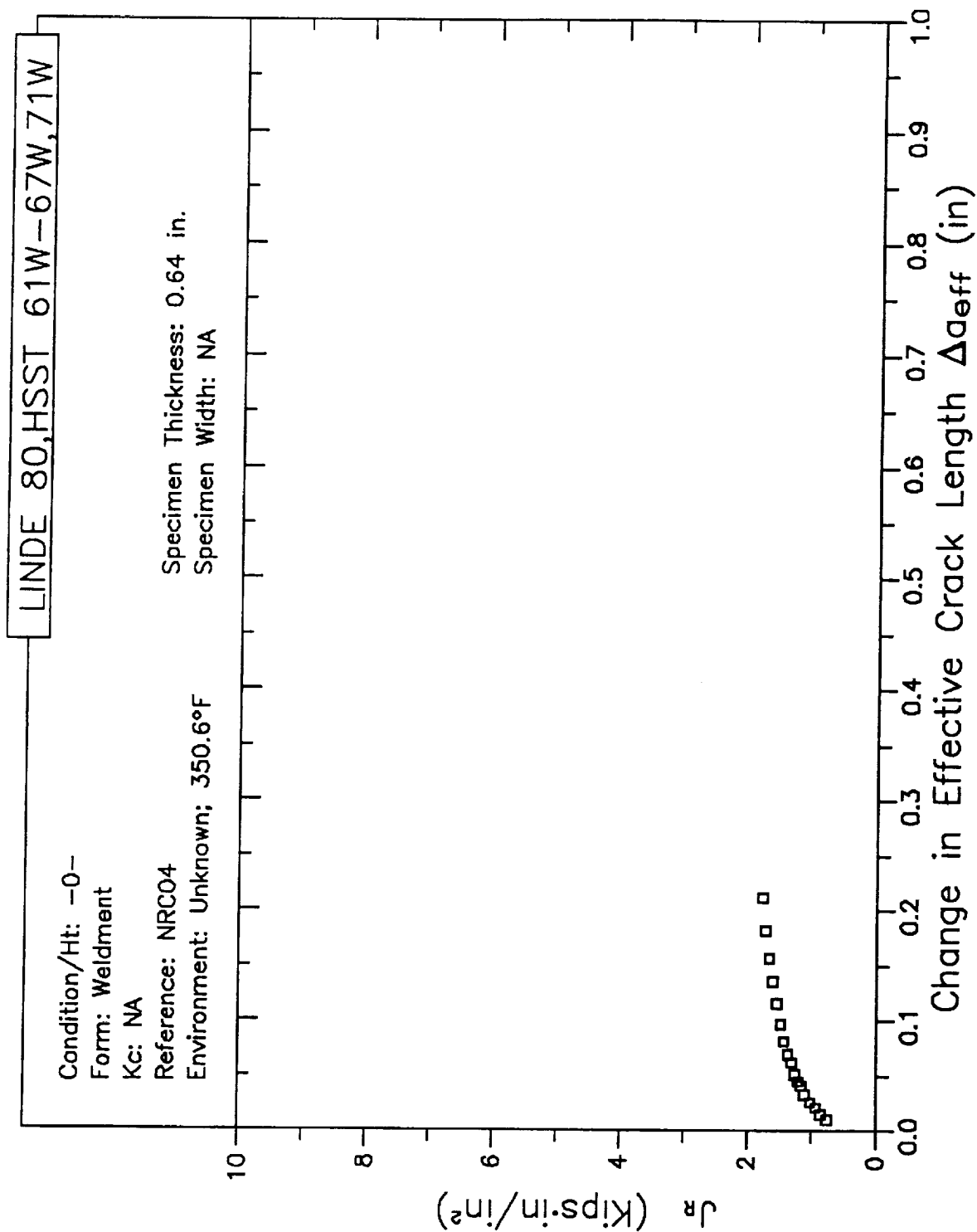
LINDE 80,HSST 61W-67W,71W

Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 350.6°F

Specimen Thickness: 0.64 in.  
Specimen Width: NA



# RESISTANCE CURVE

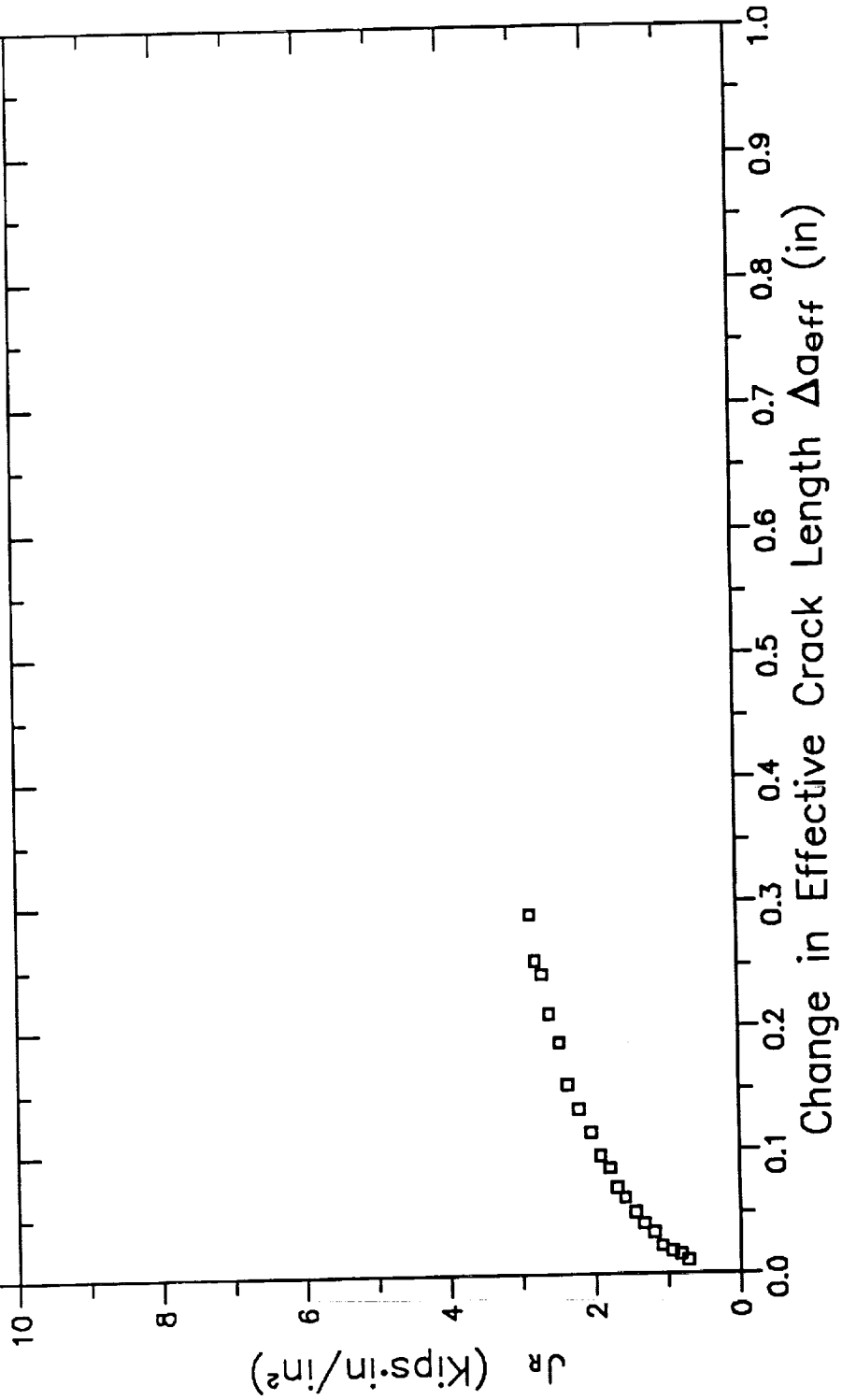


# RESISTANCE CURVE

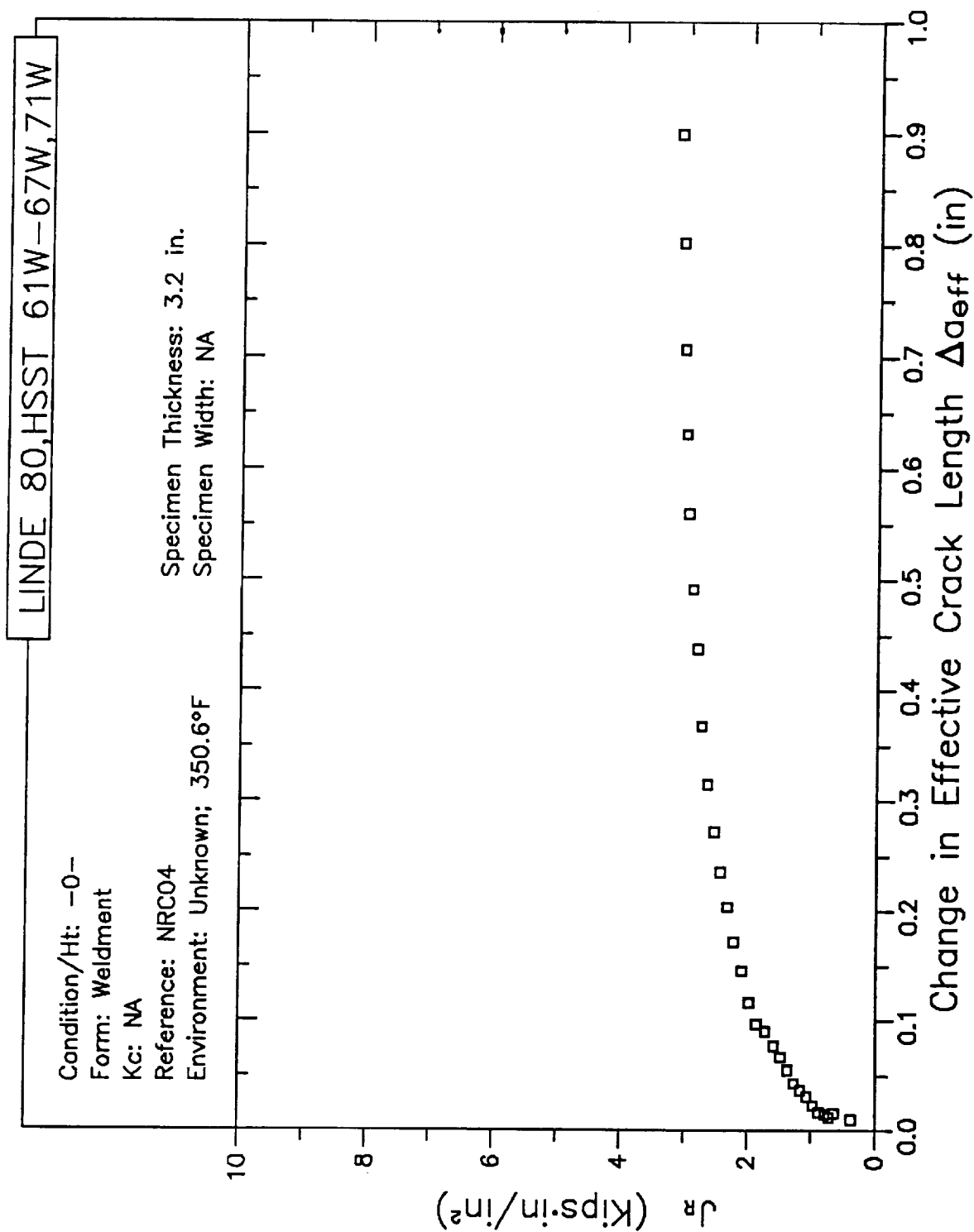
LINDE 80,HSST 61W-67W,71W

Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 350.6°F

Specimen Thickness: 1.28 in.  
Specimen Width: NA



# RESISTANCE CURVE

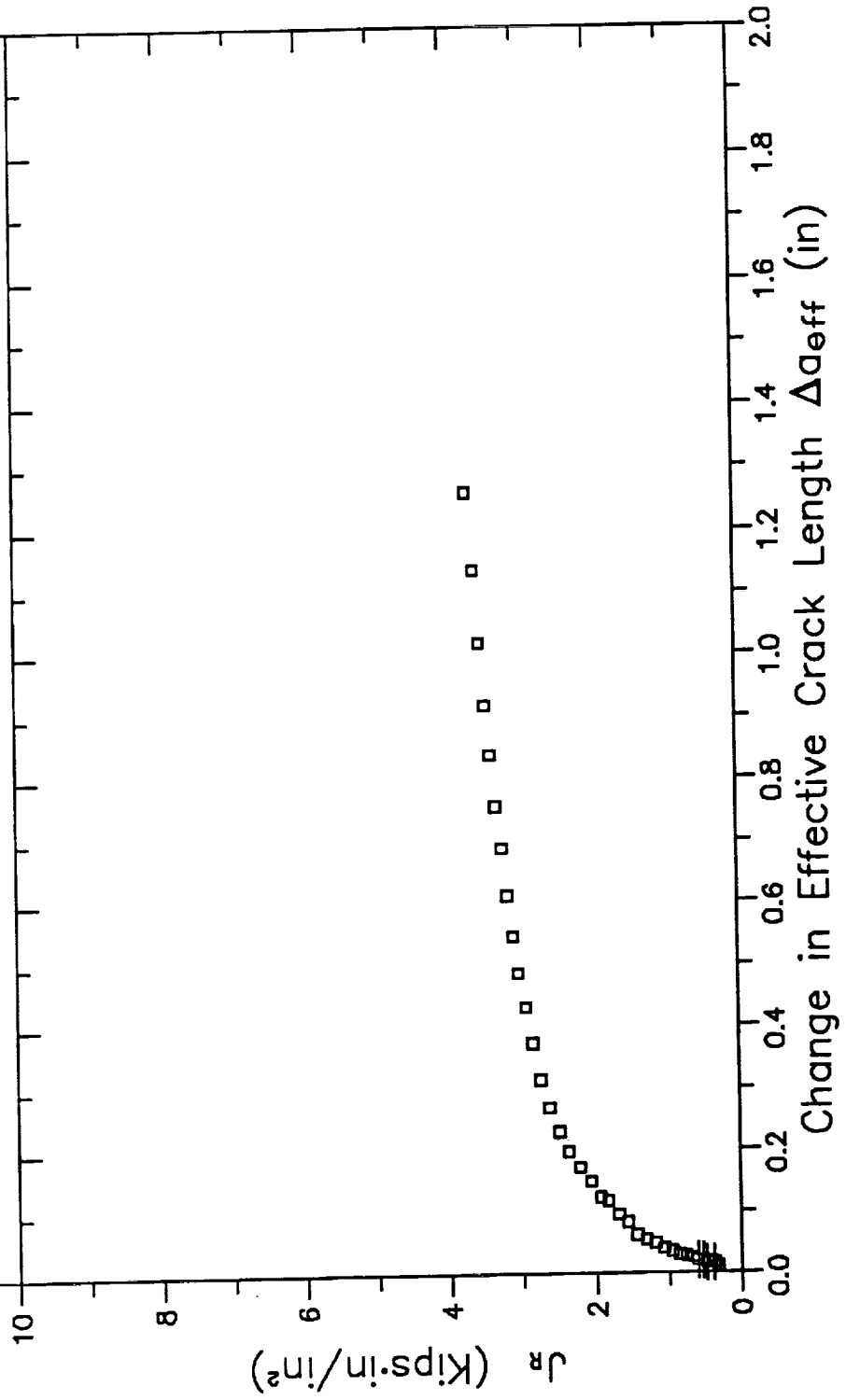


# RESISTANCE CURVE

LINDE 80,HSST 61W-67W,71W

Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 350.6°F

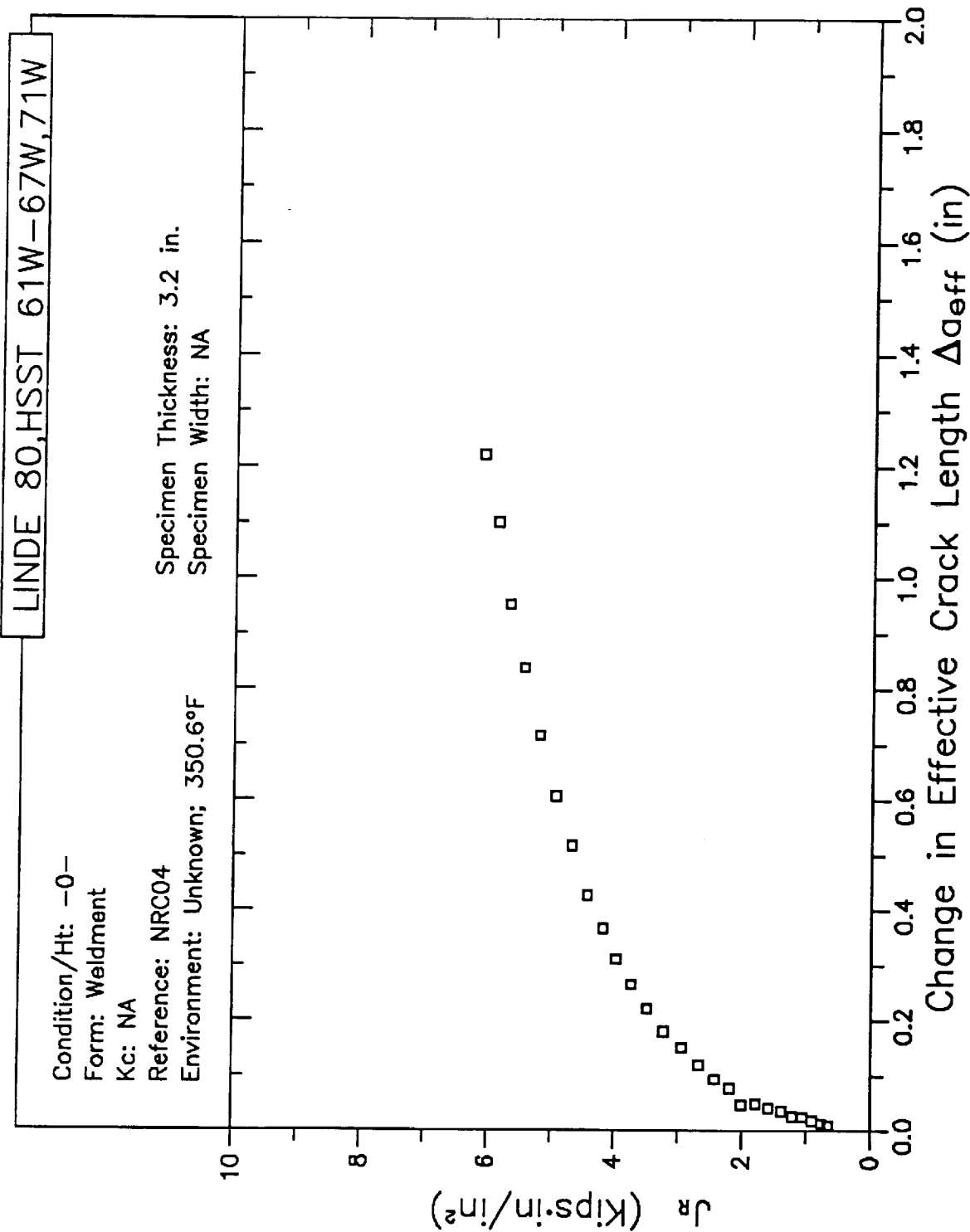
Specimen Thickness: 3.2 in.  
Specimen Width: NA



B3-328



# RESISTANCE CURVE

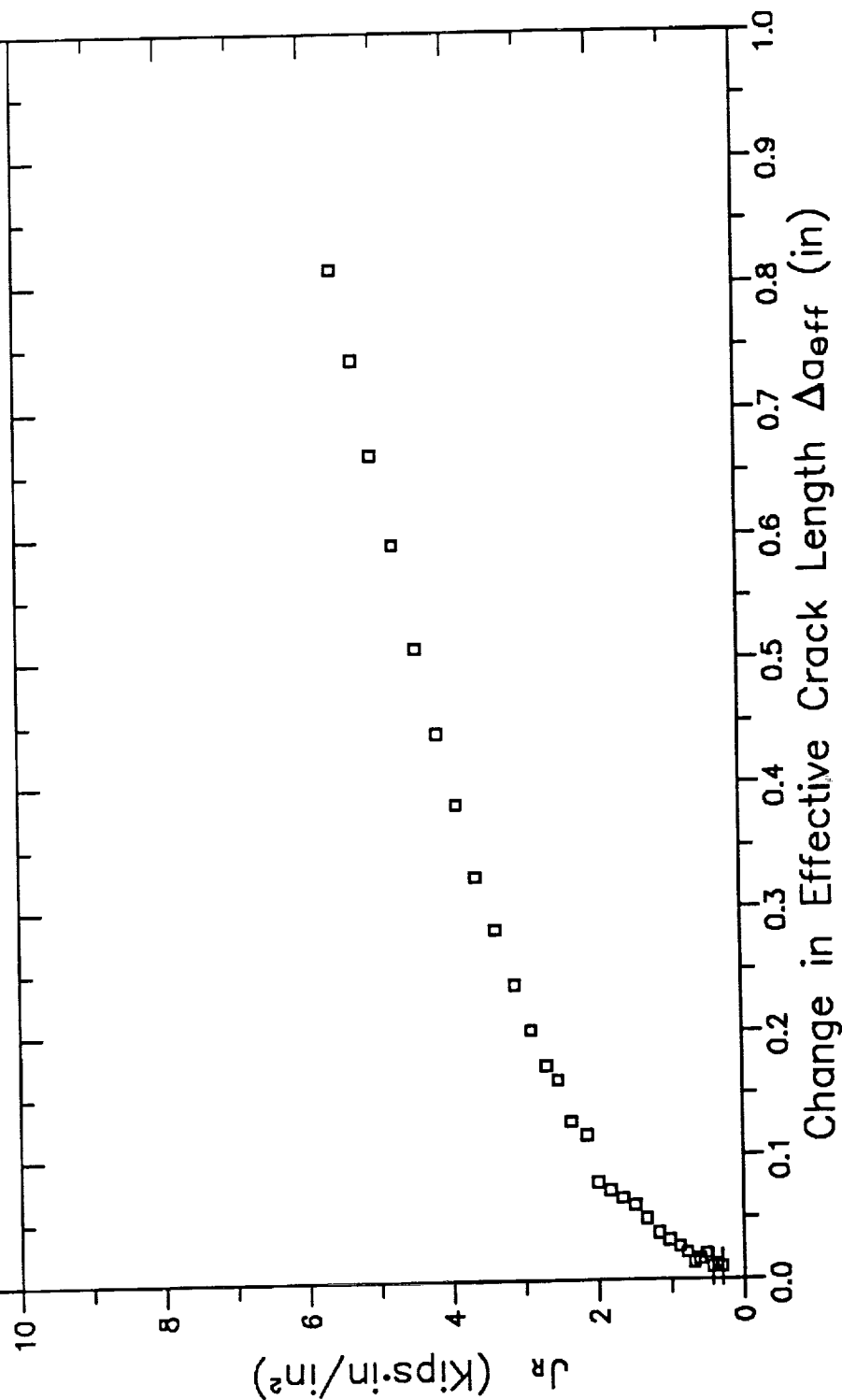


# RESISTANCE CURVE

LINDE 80,HSST 61W-67W,71W

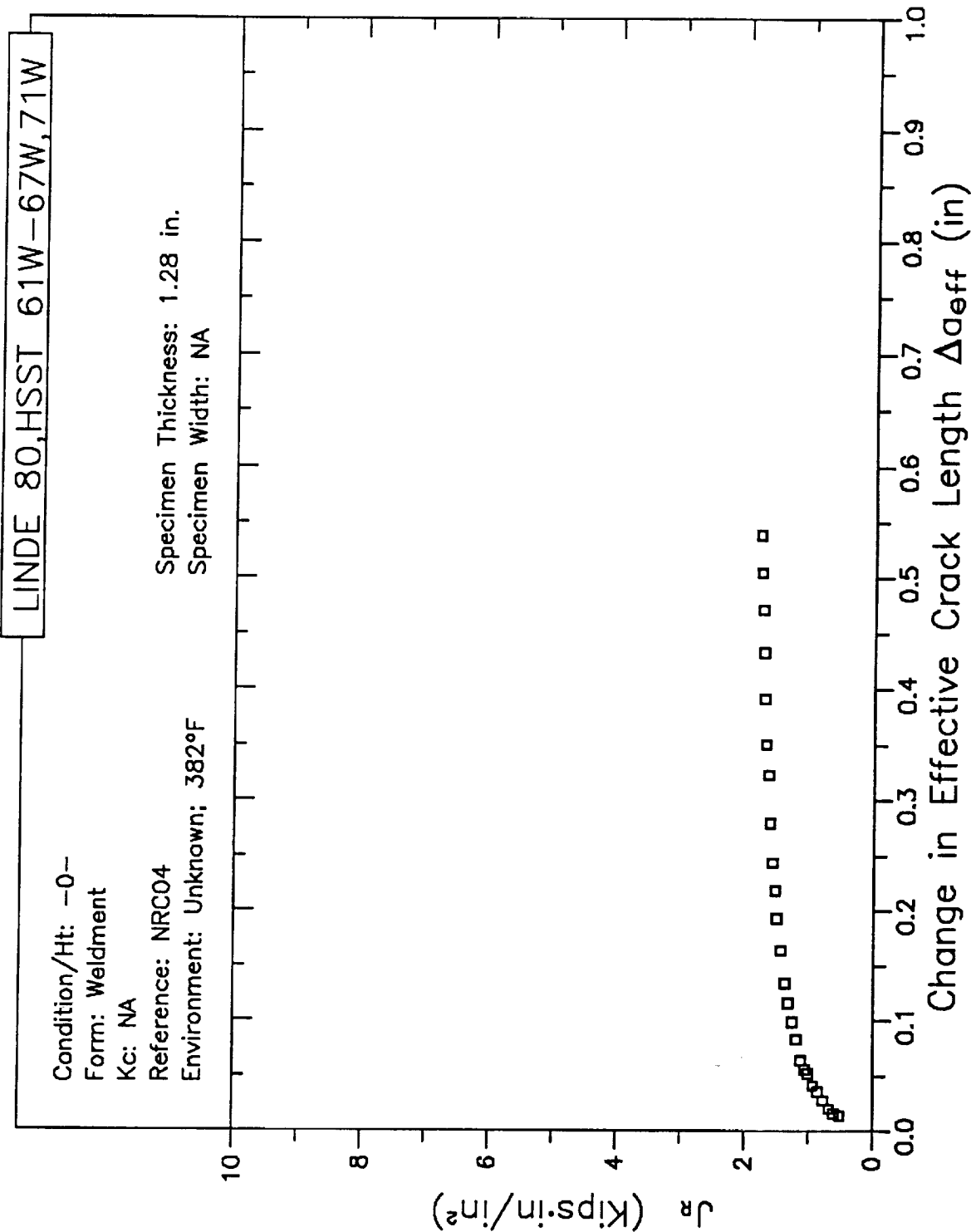
Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 350.6°F

Specimen Thickness: 3.2 in.  
Specimen Width: NA



B3-330

# RESISTANCE CURVE

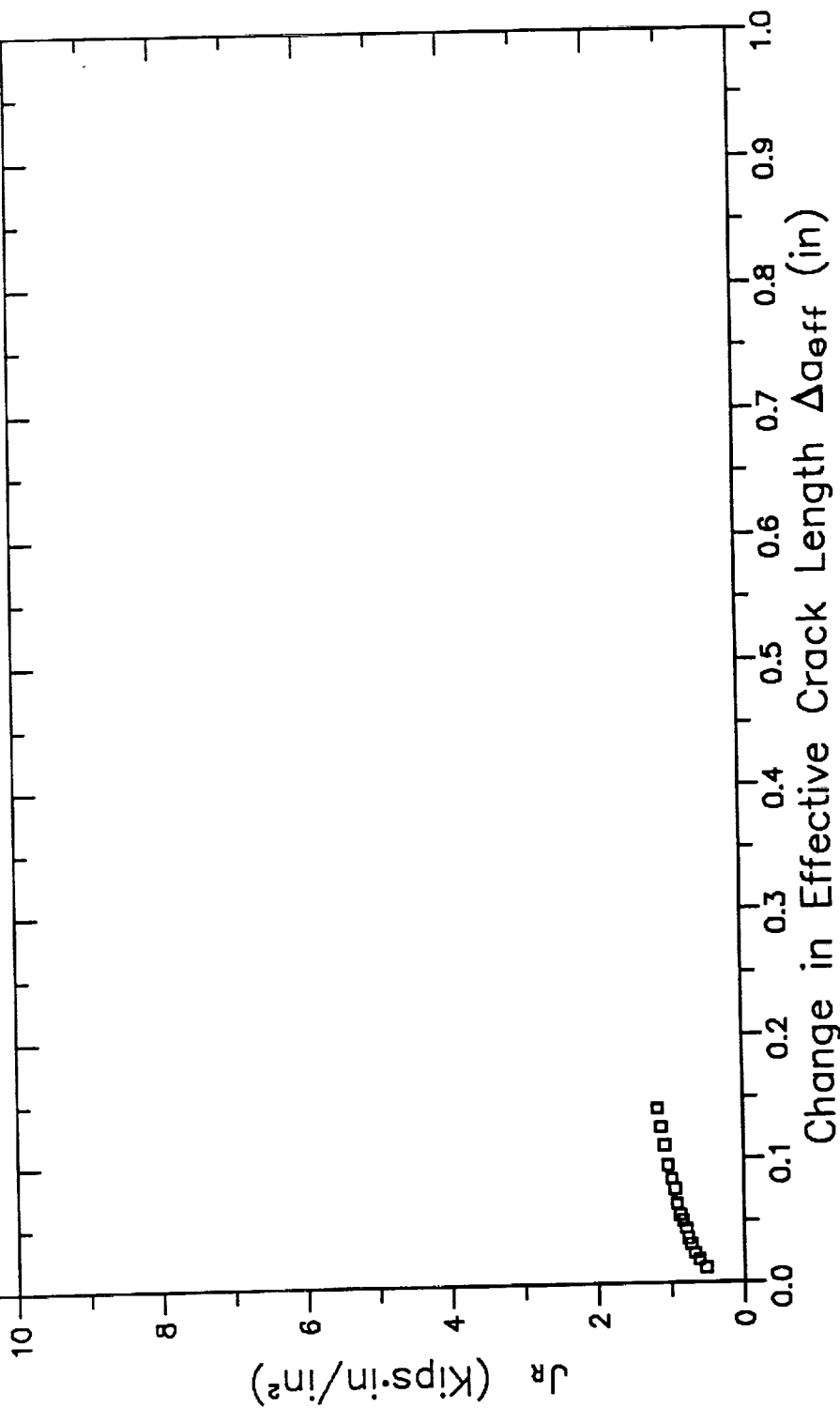


# RESISTANCE CURVE

LINDE 80,HSST 61W-67W,71W

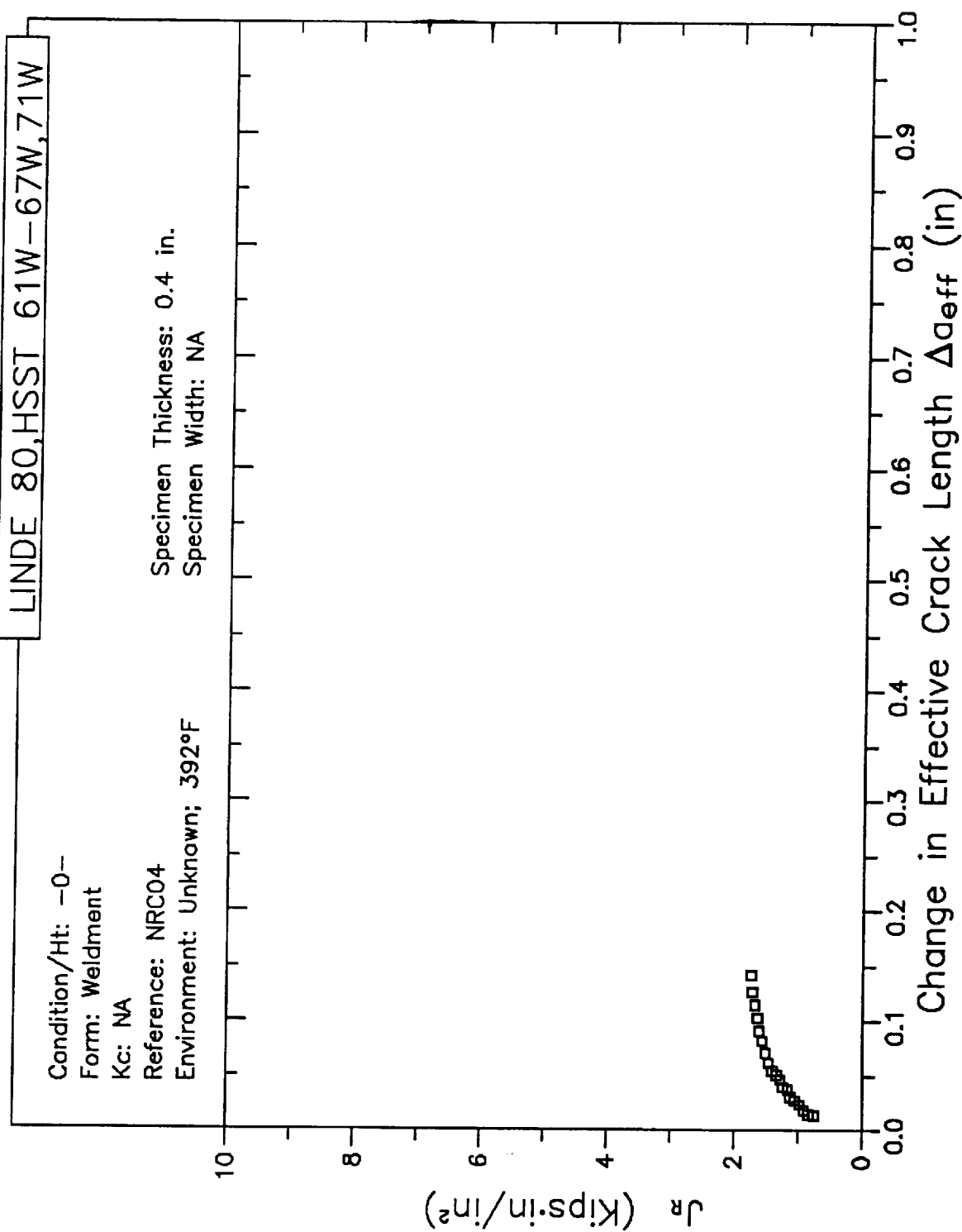
Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 392°F

Specimen Thickness: 0.4 in.  
Specimen Width: NA



B3-332

# RESISTANCE CURVE

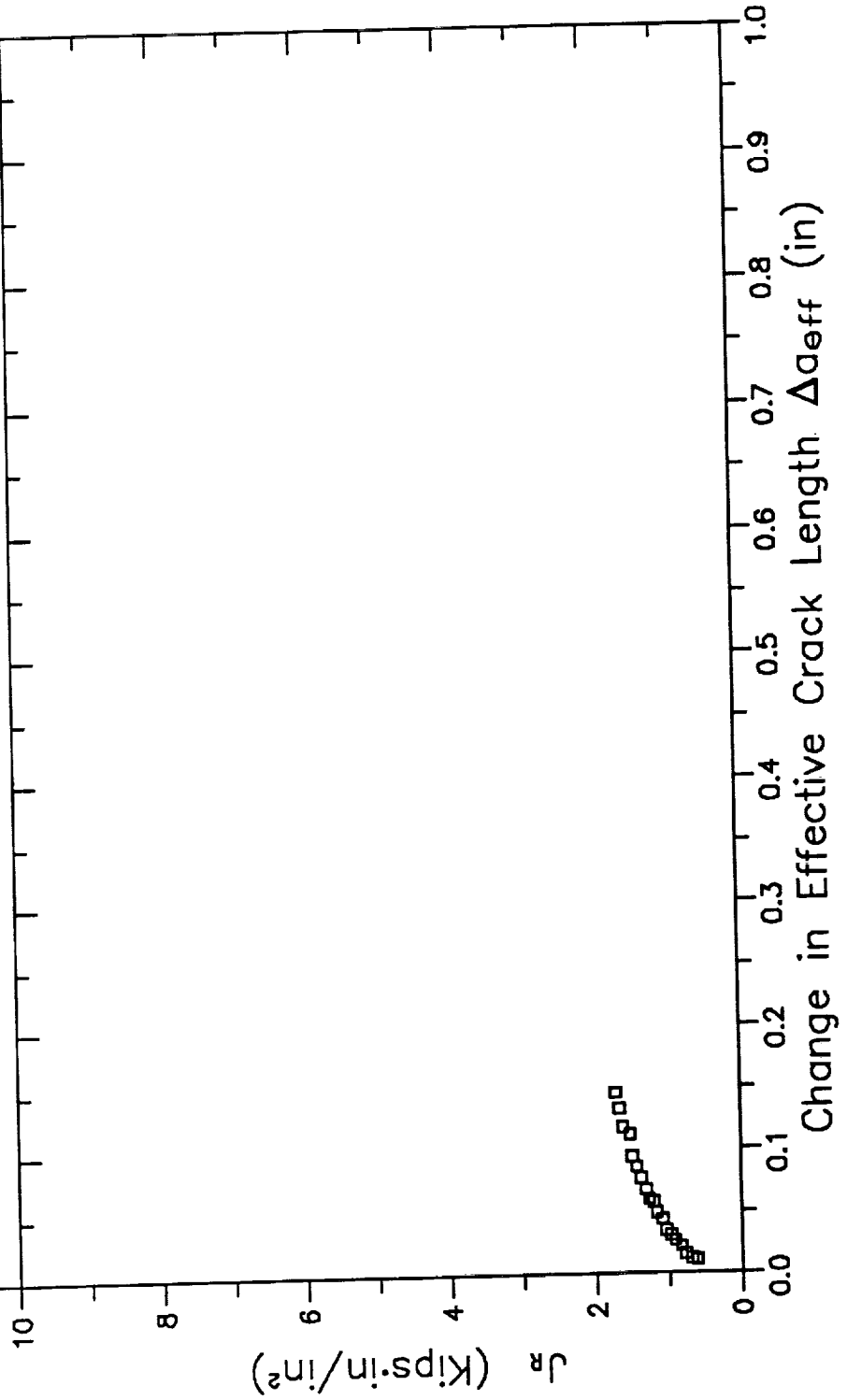


# RESISTANCE CURVE

LINDE 80,HSST 61W-67W,71W

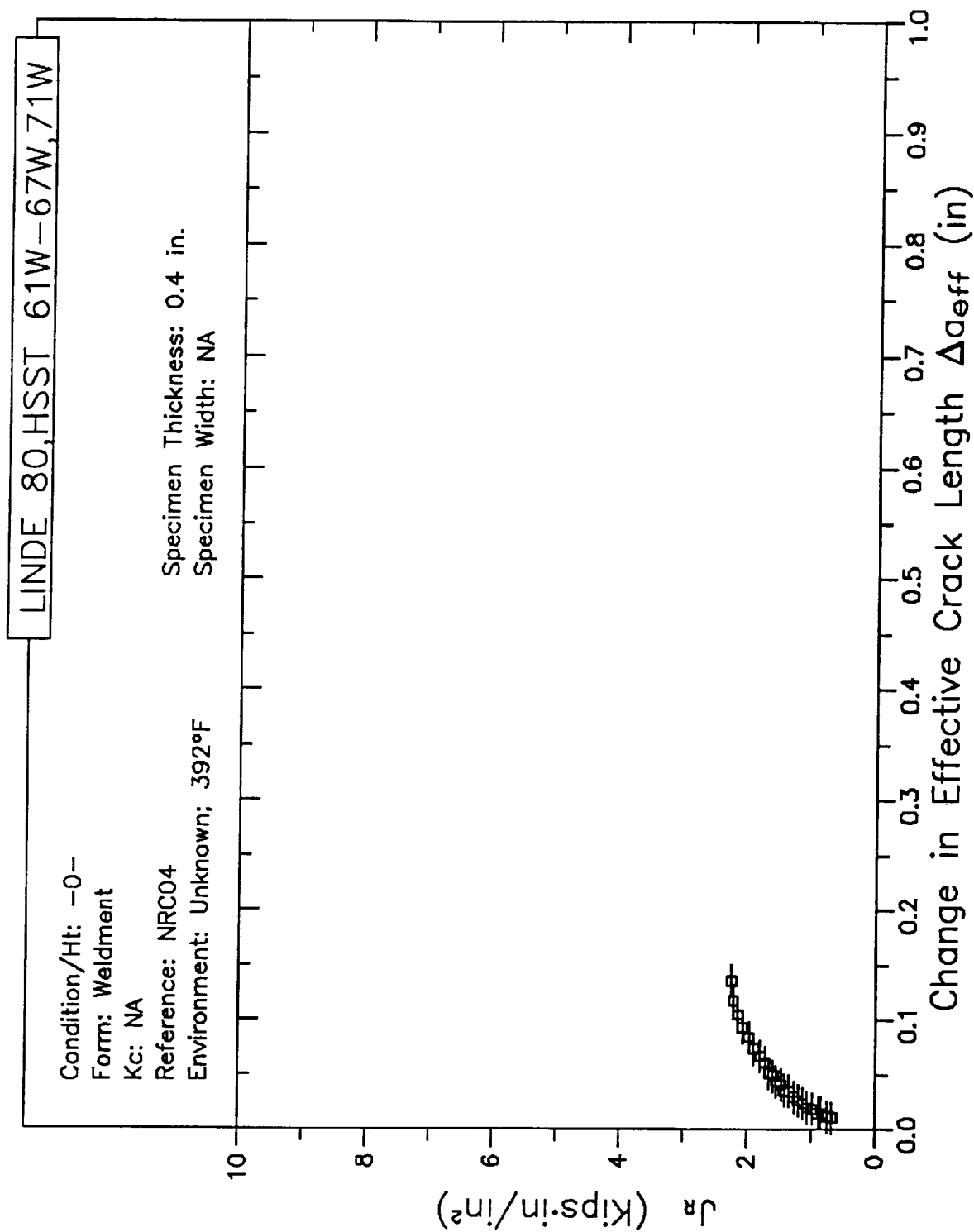
Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 392°F

Specimen Thickness: 0.4 in.  
Specimen Width: NA



B3-334

# RESISTANCE CURVE

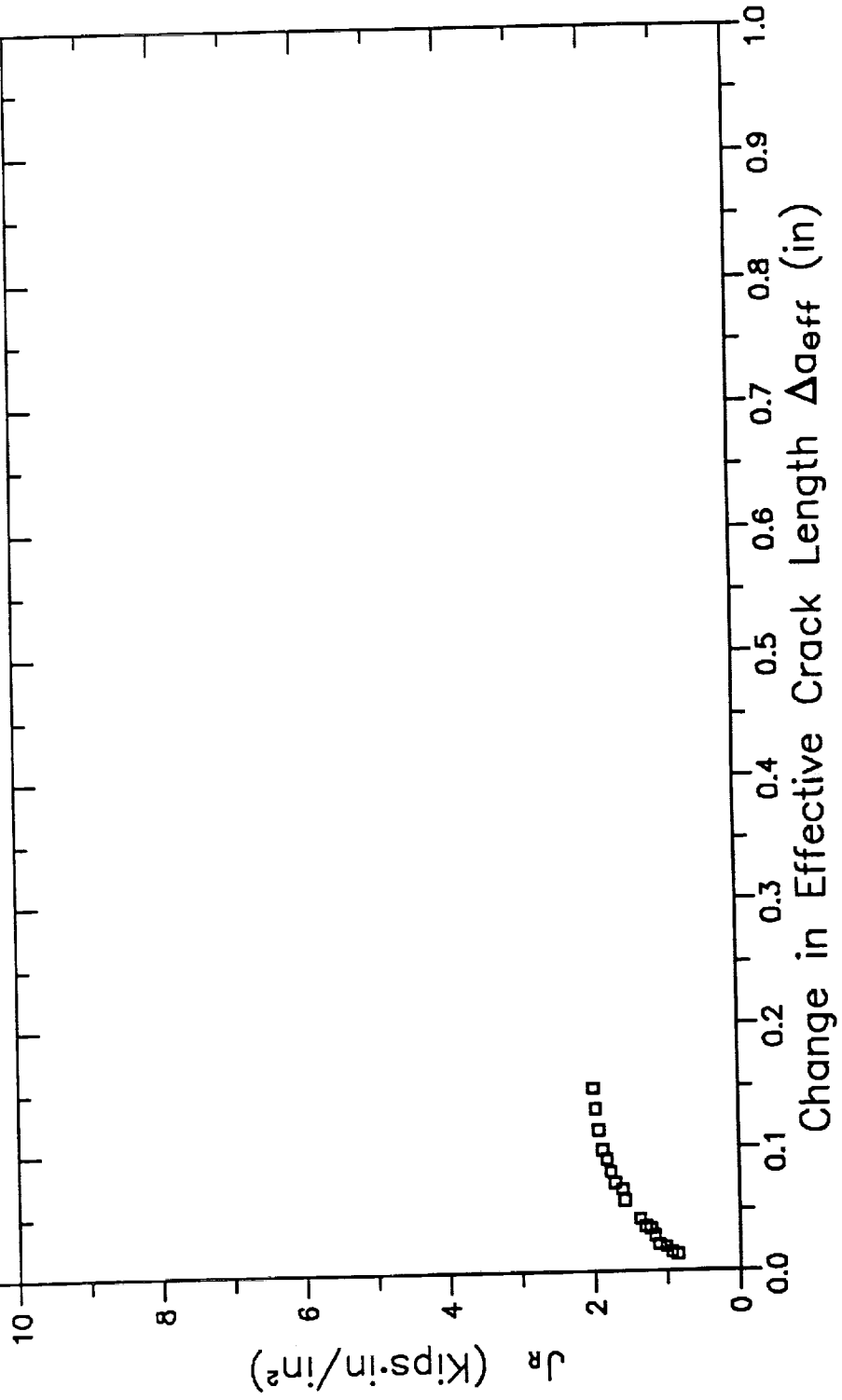


# RESISTANCE CURVE

LINDE 80, HSST 61W-67W, 71W

Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 392°F

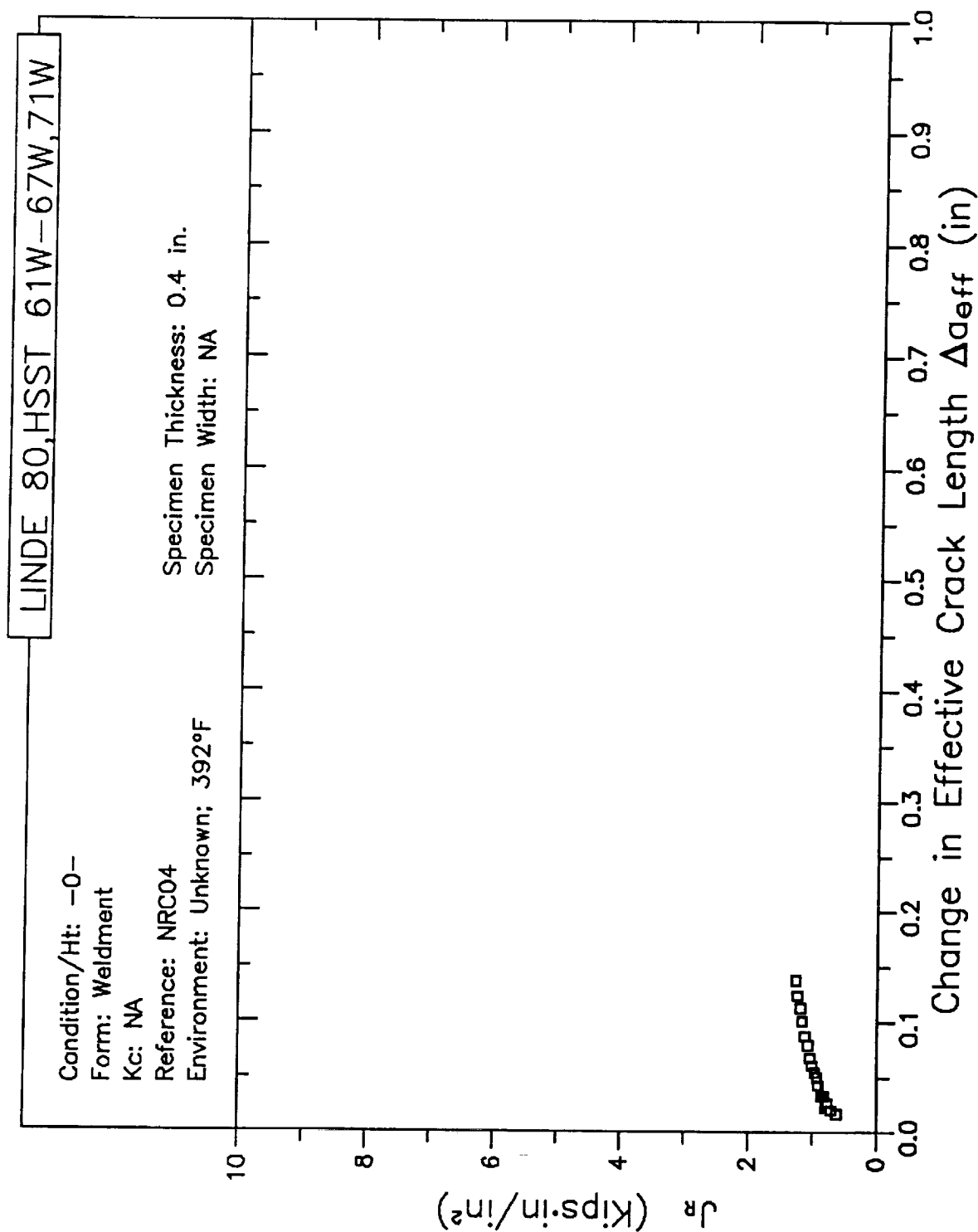
Specimen Thickness: 0.4 in.  
Specimen Width: NA



B3-336



# RESISTANCE CURVE

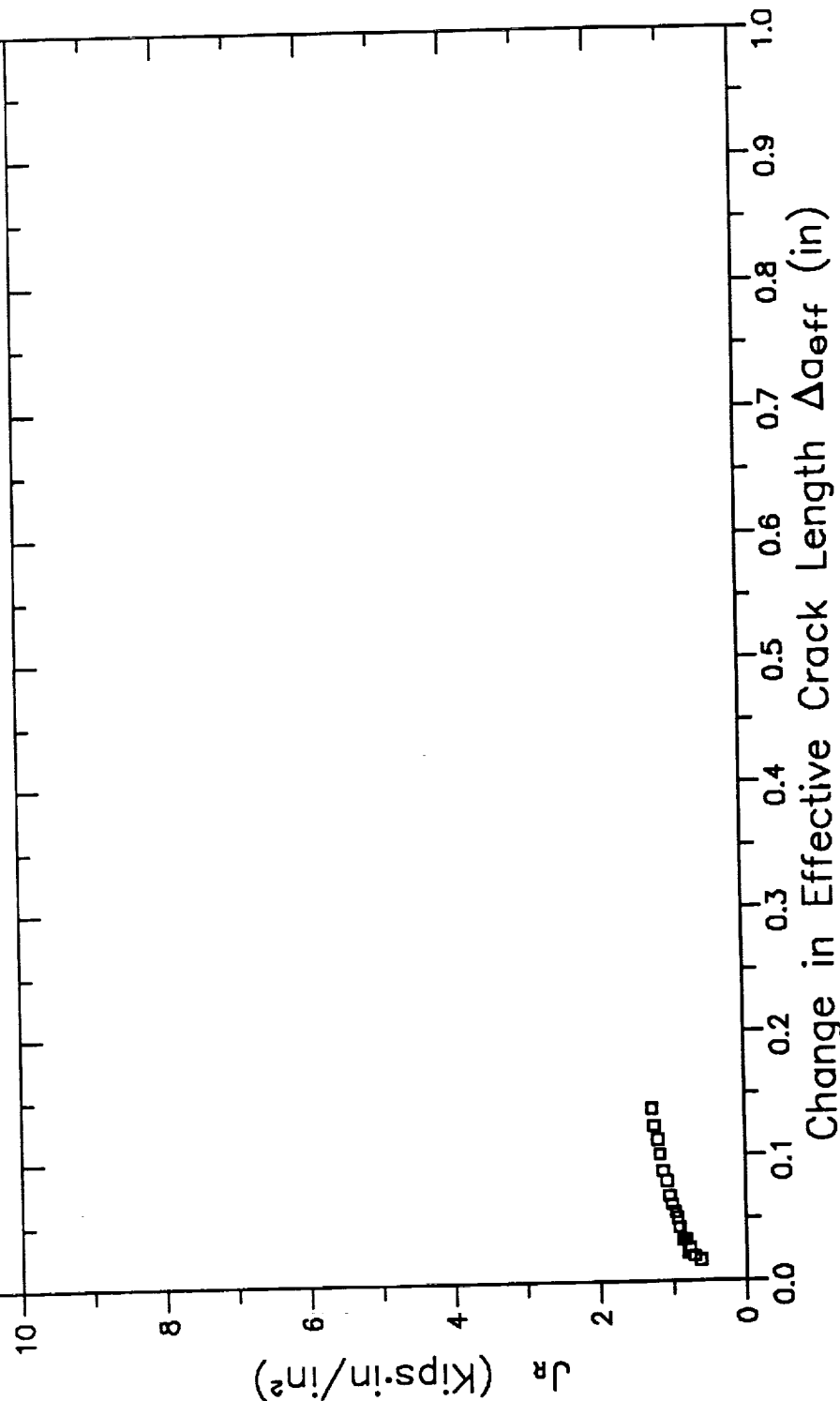


# RESISTANCE CURVE

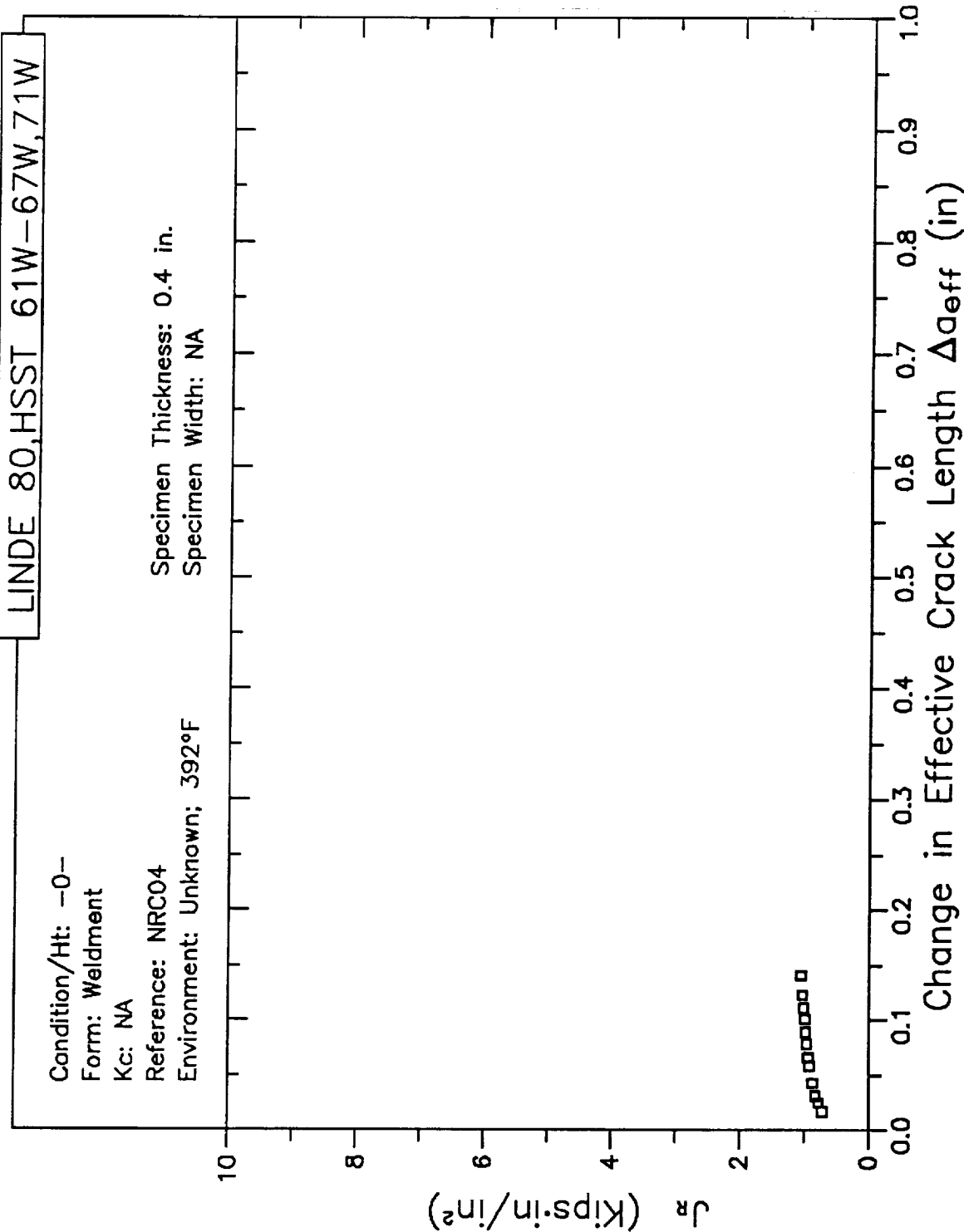
LINDE 80,HSST 61W-67W,71W

Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRCO4  
Environment: Unknown; 392°F

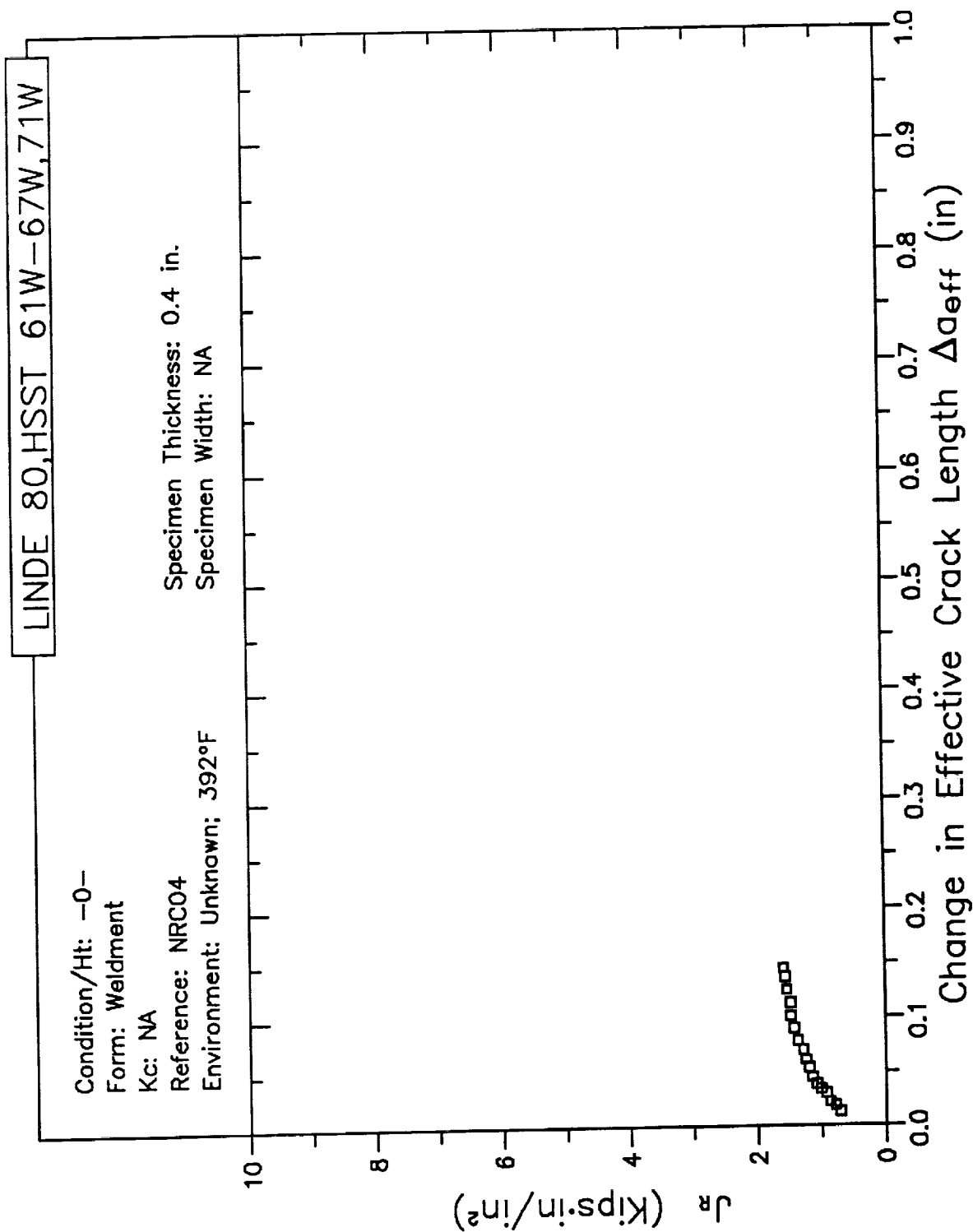
Specimen Thickness: 0.4 in.  
Specimen Width: NA



# RESISTANCE CURVE

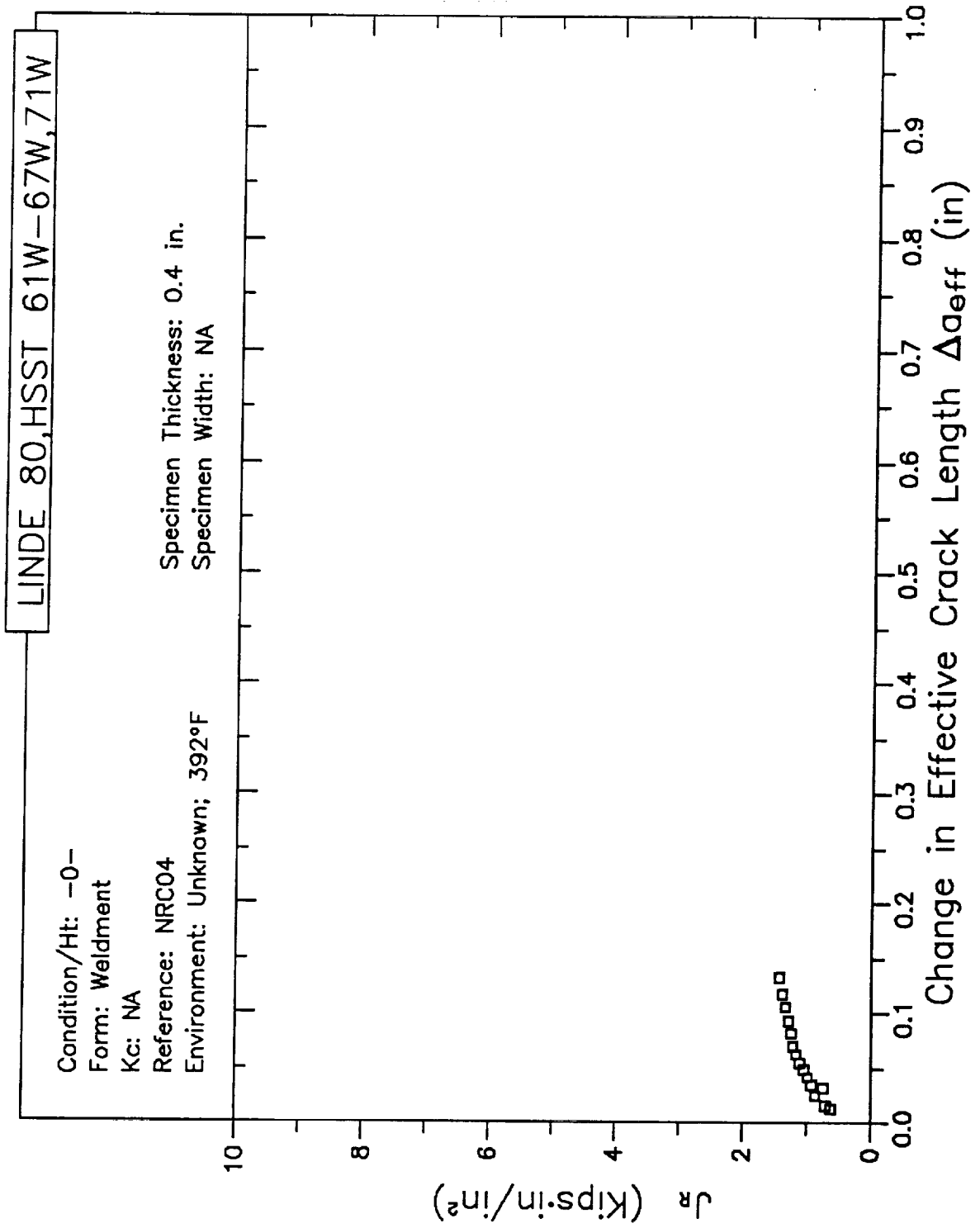


# RESISTANCE CURVE



B3-340

# RESISTANCE CURVE

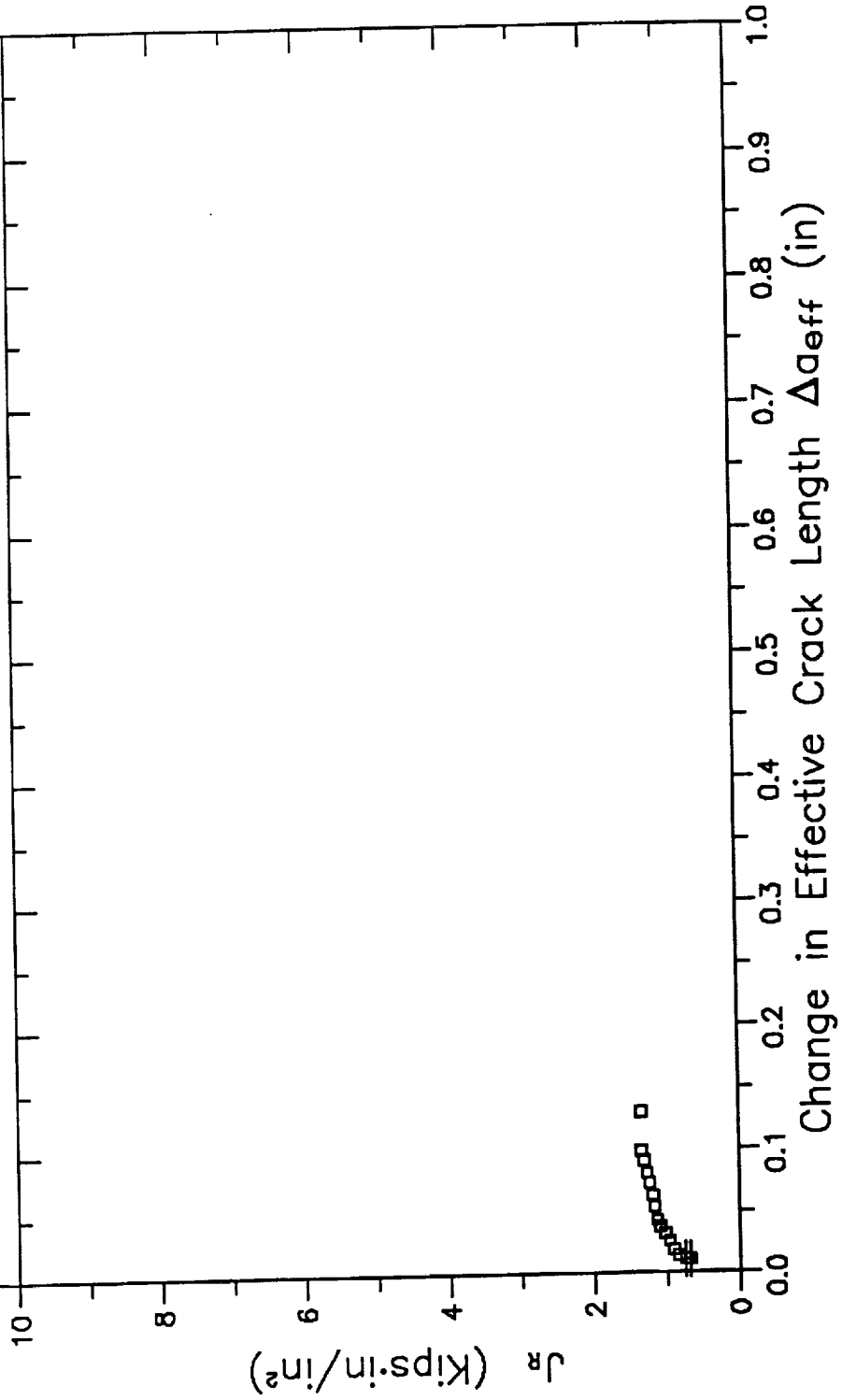


# RESISTANCE CURVE

LINDE 80,HSST 61W-67W,71W

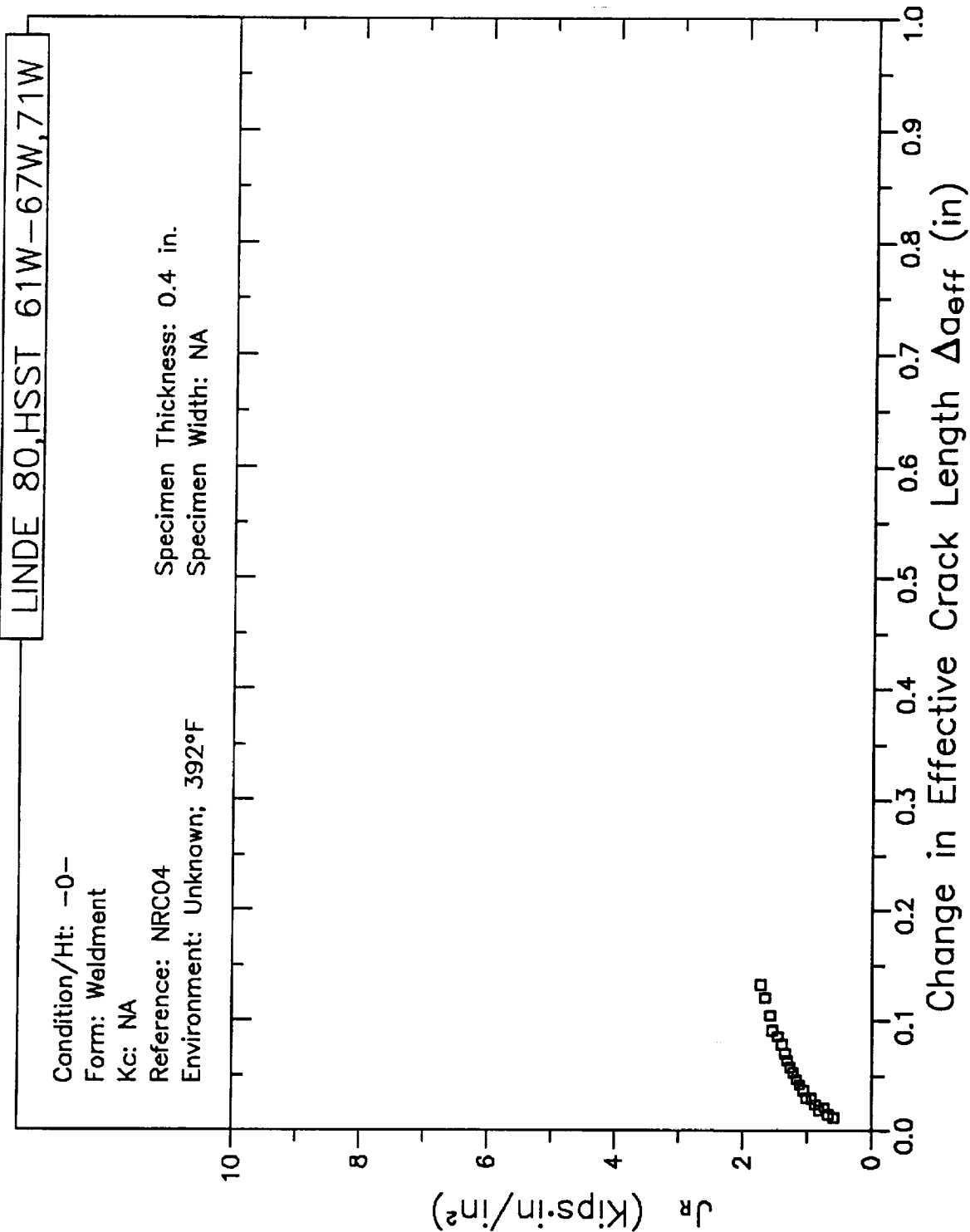
Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 392°F

Specimen Thickness: 0.4 in.  
Specimen Width: NA



B3-342

# RESISTANCE CURVE

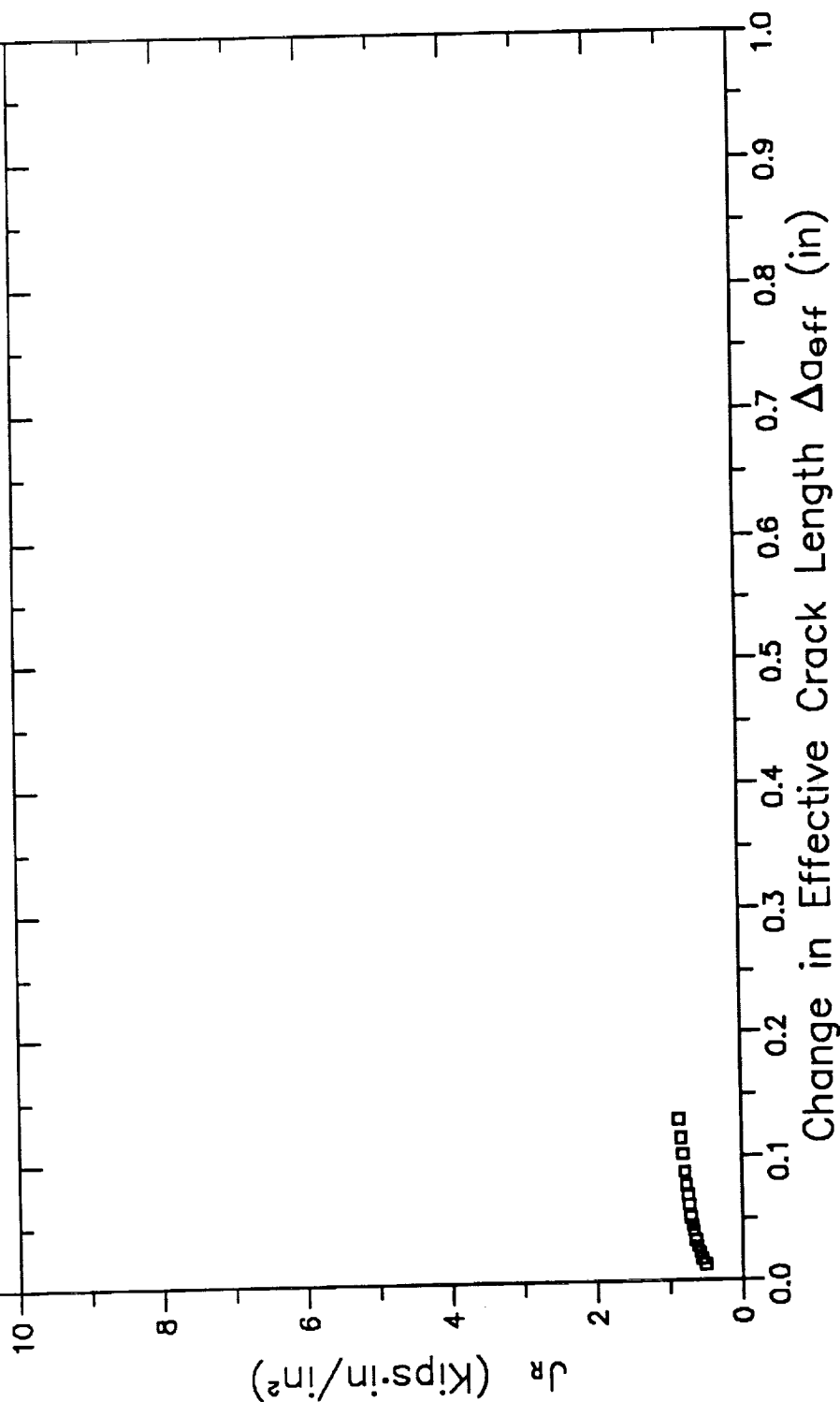


# RESISTANCE CURVE

LINDE 80,HSST 61W-67W,71W

Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 392°F

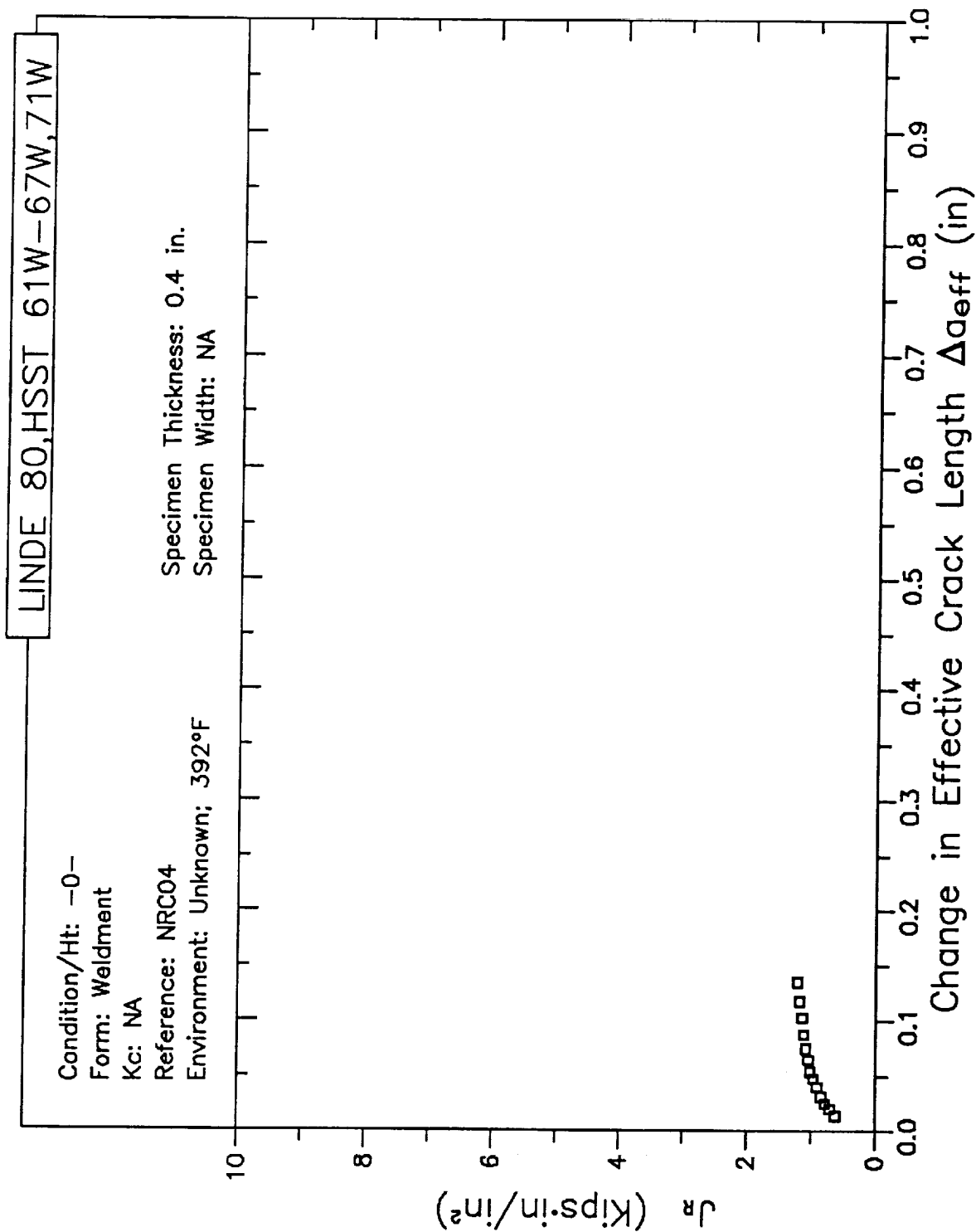
Specimen Thickness: 0.4 in.  
Specimen Width: NA



B3-344



# RESISTANCE CURVE

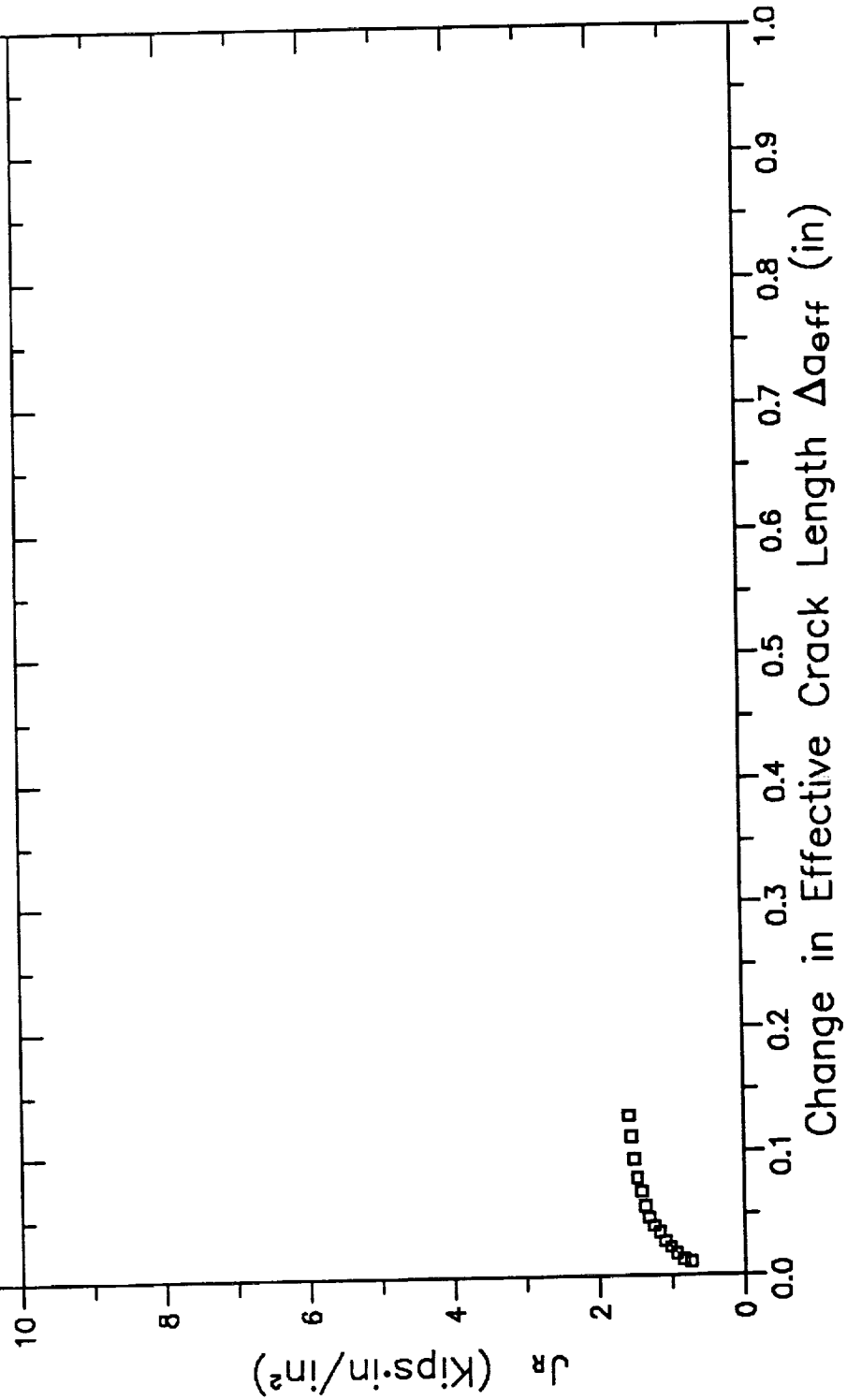


# RESISTANCE CURVE

LINDE 80,HSST 61W-67W,71W

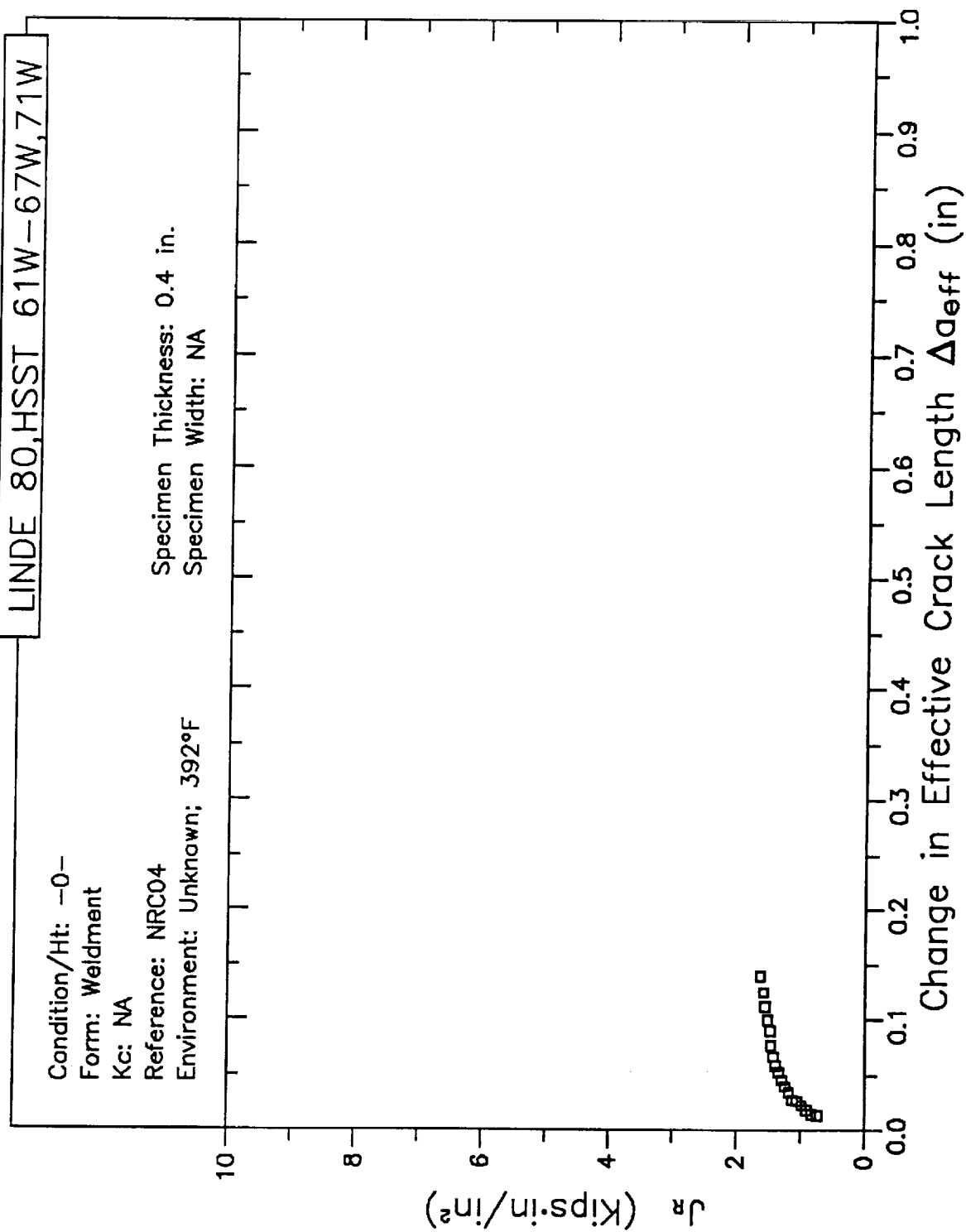
Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 392°F

Specimen Thickness: 0.4 in.  
Specimen Width: NA



B3-346

# RESISTANCE CURVE

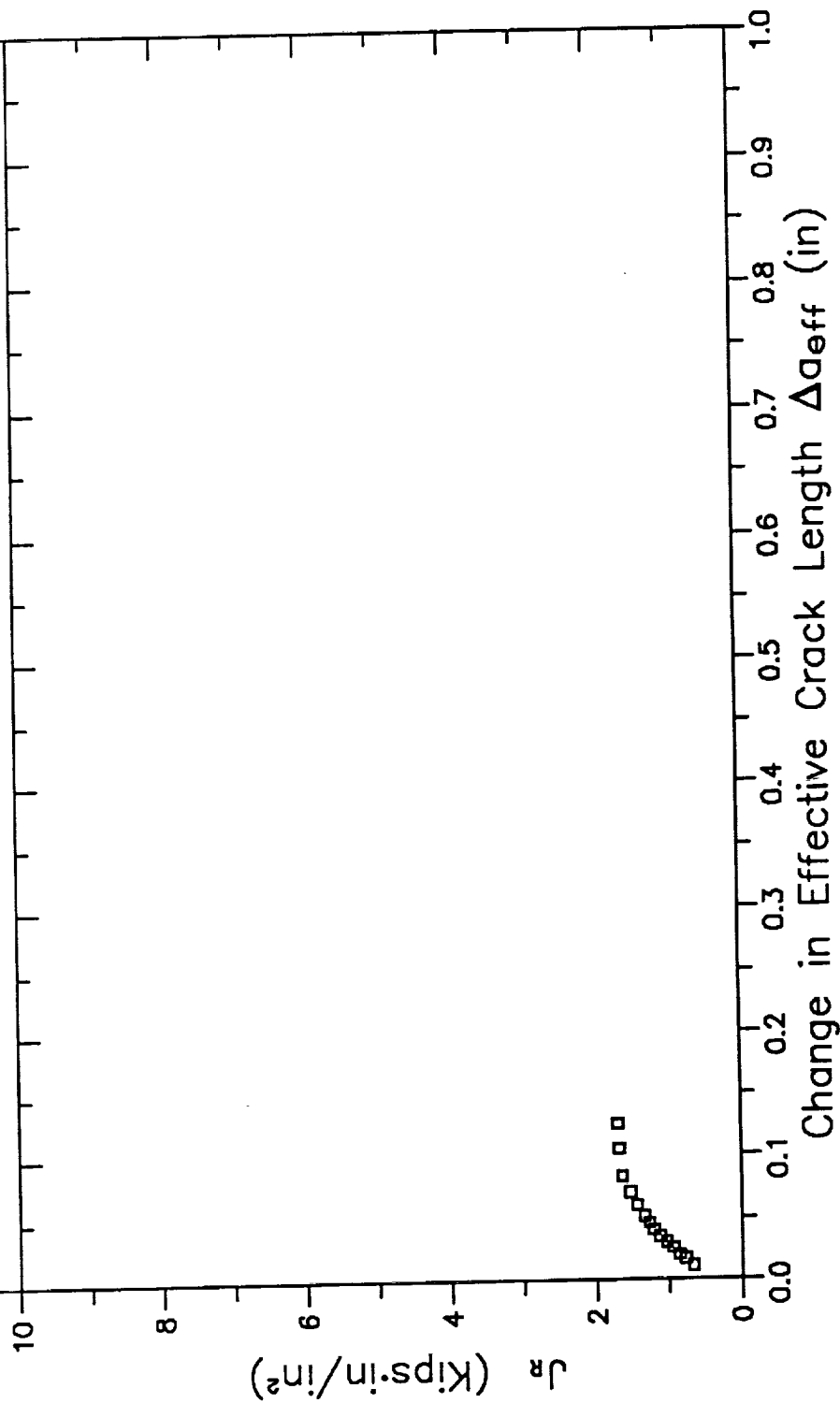


# RESISTANCE CURVE

LINDE 80,HSST 61W-67W,71W

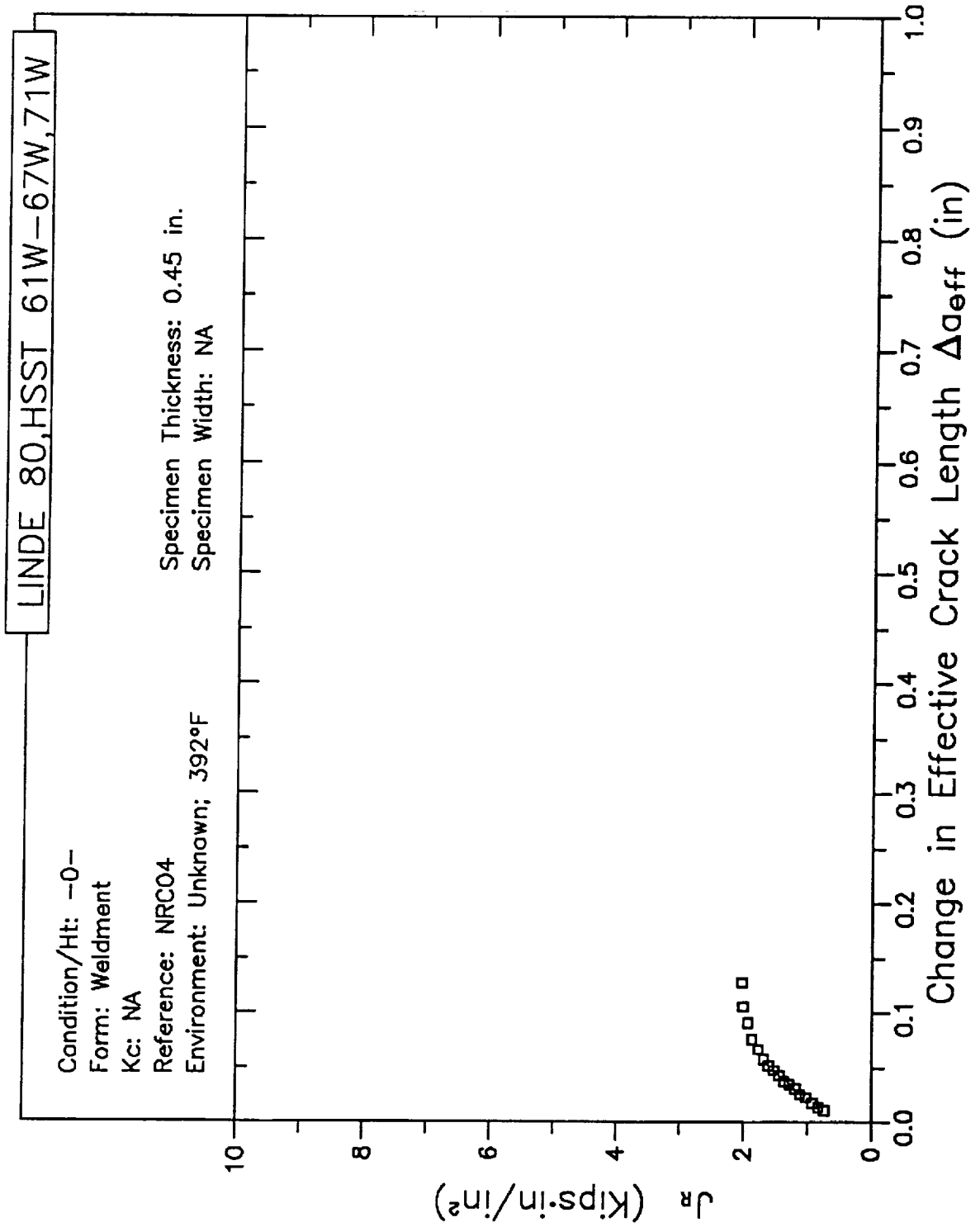
Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 392°F

Specimen Thickness: 0.45 in.  
Specimen Width: NA



B3-348

# RESISTANCE CURVE

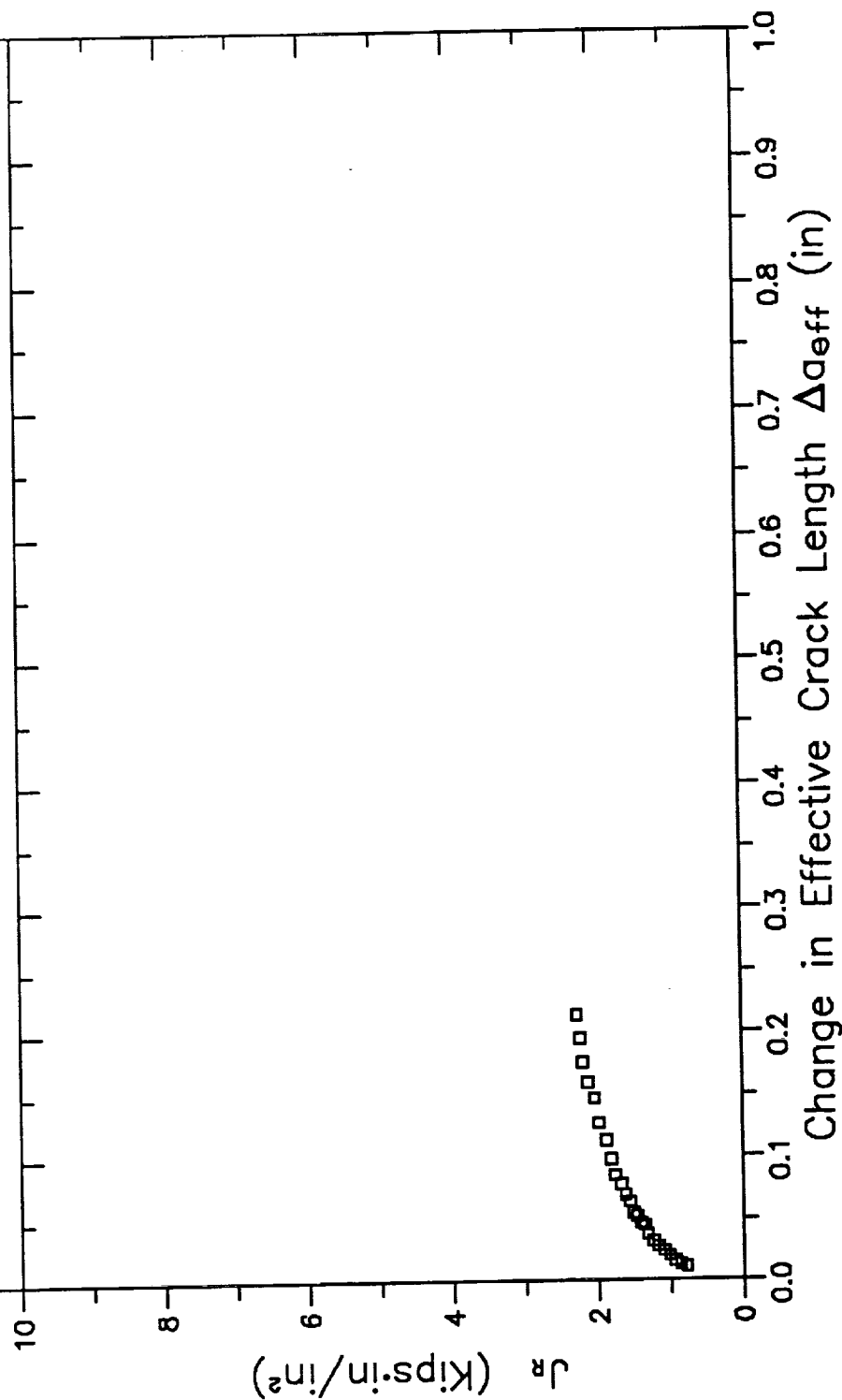


# RESISTANCE CURVE

LINDE 80, HSST 61W-67W, 71W

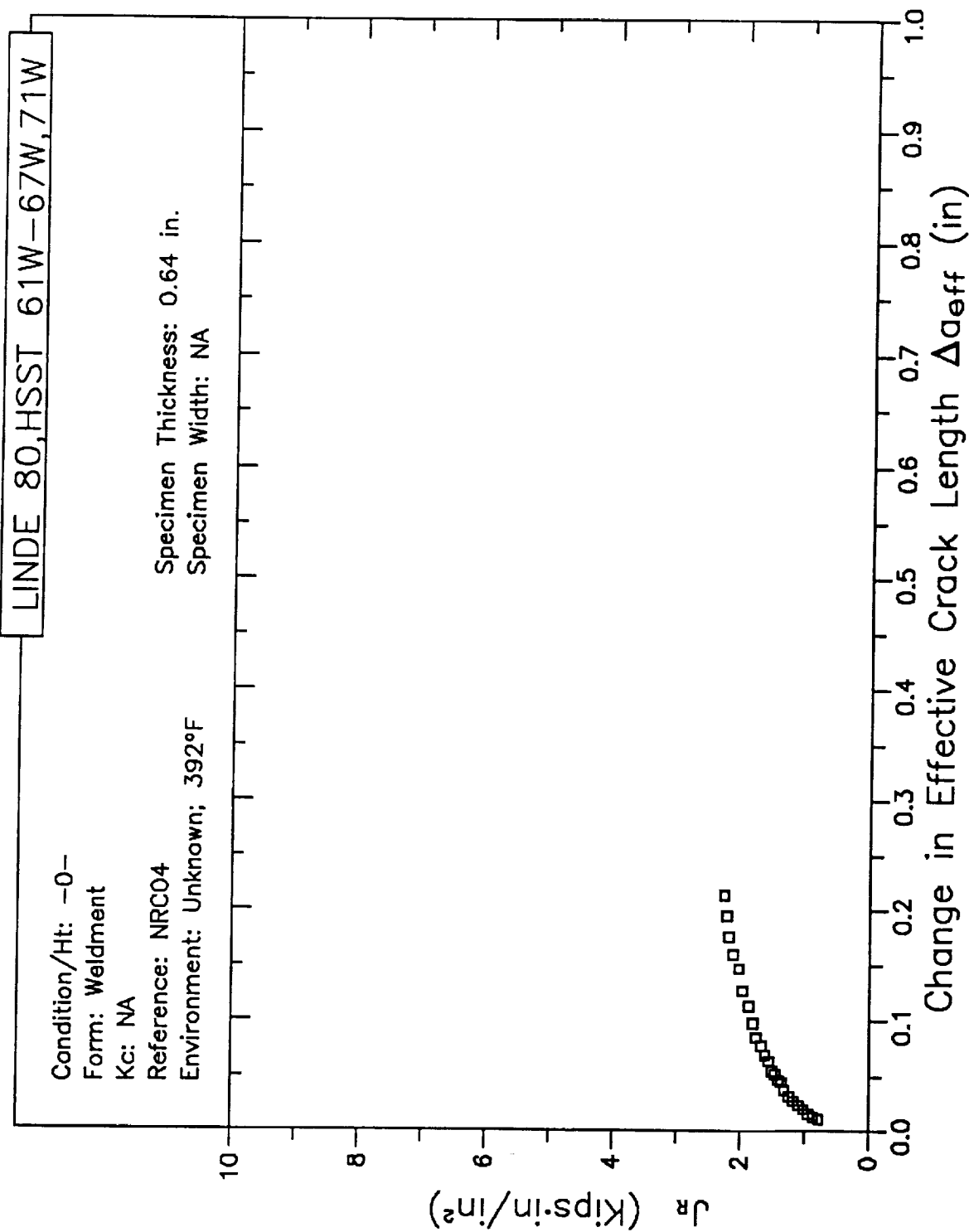
Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRCO4  
Environment: Unknown; 392°F

Specimen Thickness: 0.64 in.  
Specimen Width: NA



B3-350

# RESISTANCE CURVE

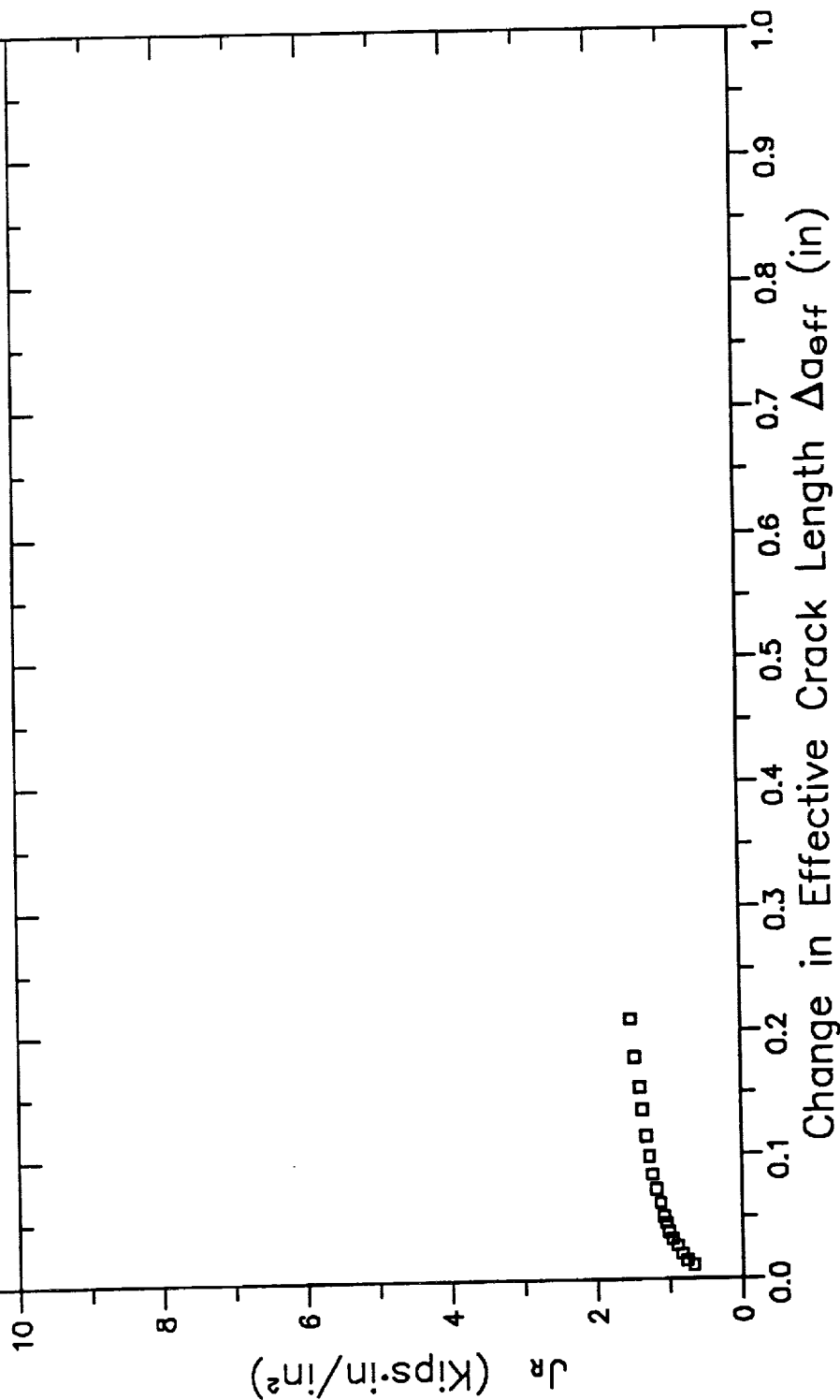


# RESISTANCE CURVE

LINDE 80,HSST 61W-67W,71W

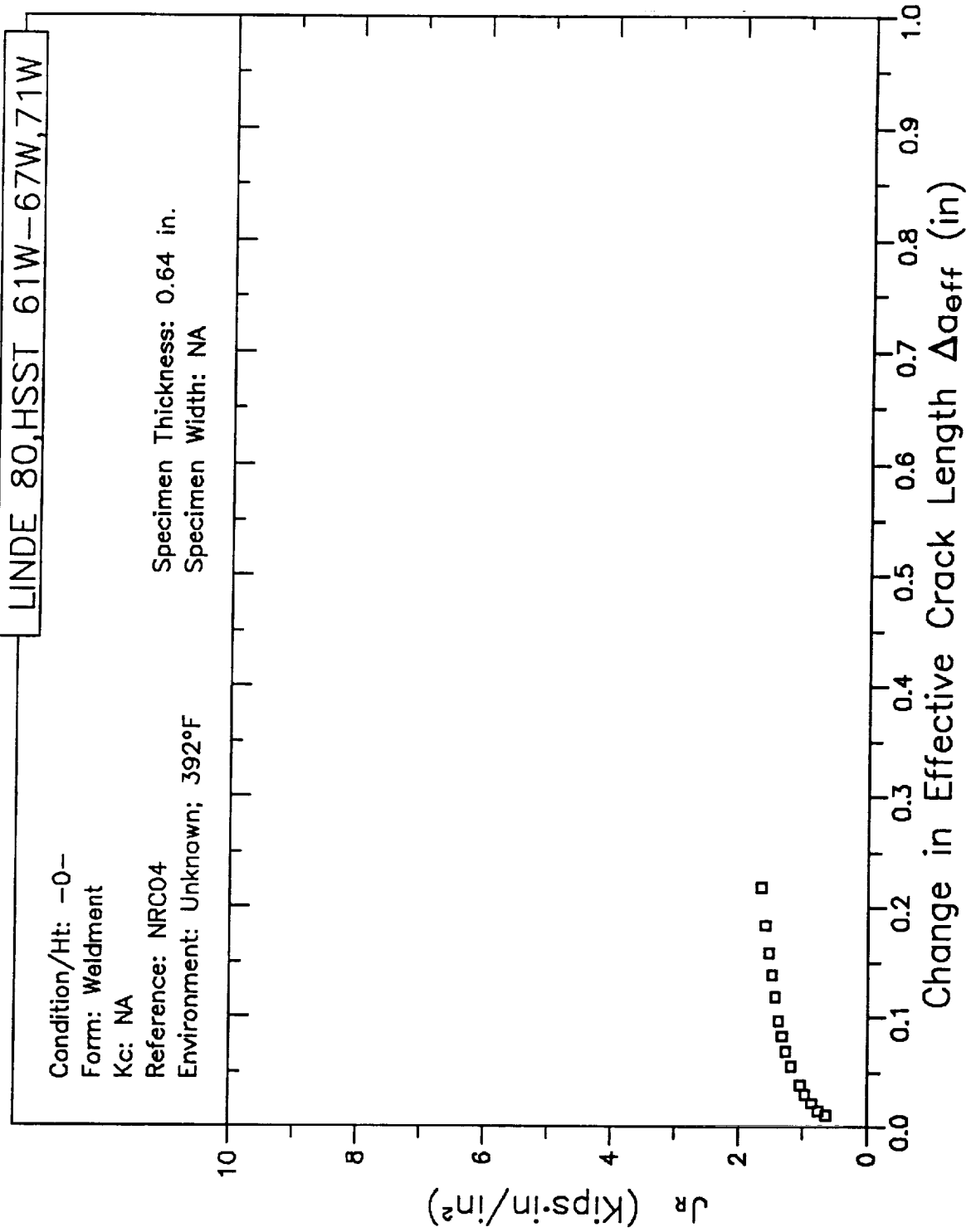
Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 392°F

Specimen Thickness: 0.64 in.  
Specimen Width: NA





# RESISTANCE CURVE

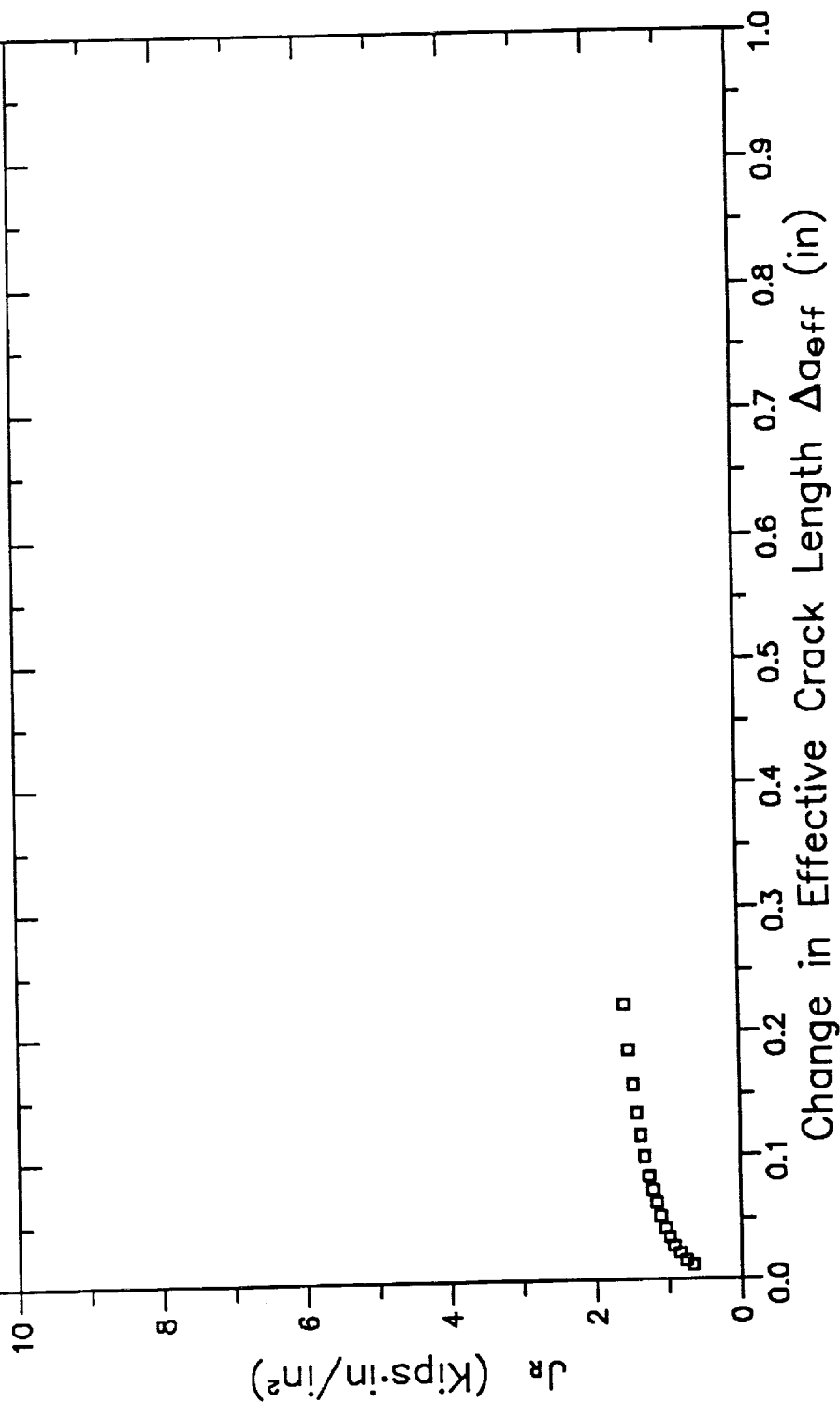


# RESISTANCE CURVE

LINDE 80,HSST 61W-67W,71W

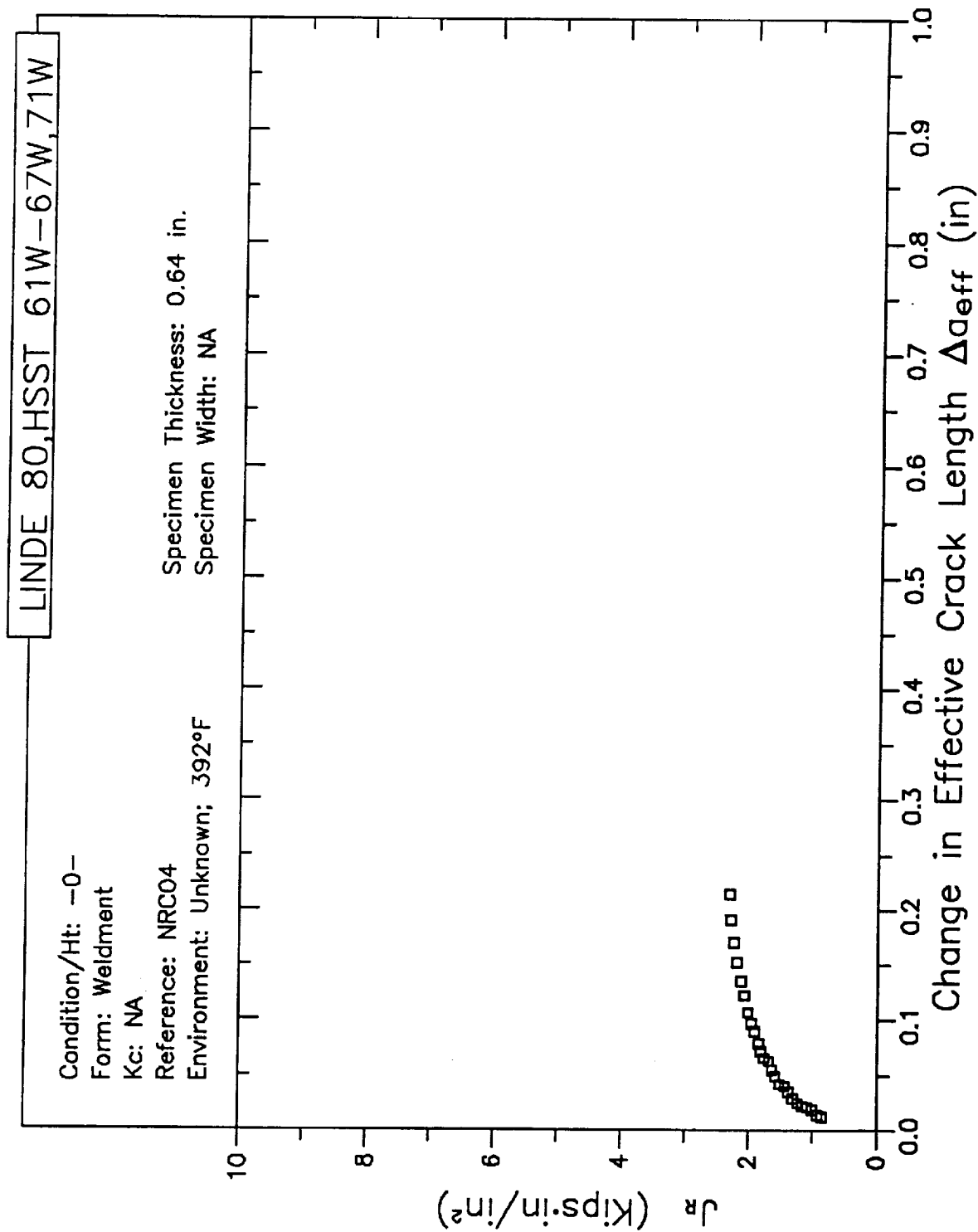
Condition/Ht: -0-  
Form: Waldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 392°F

Specimen Thickness: 0.64 in.  
Specimen Width: NA

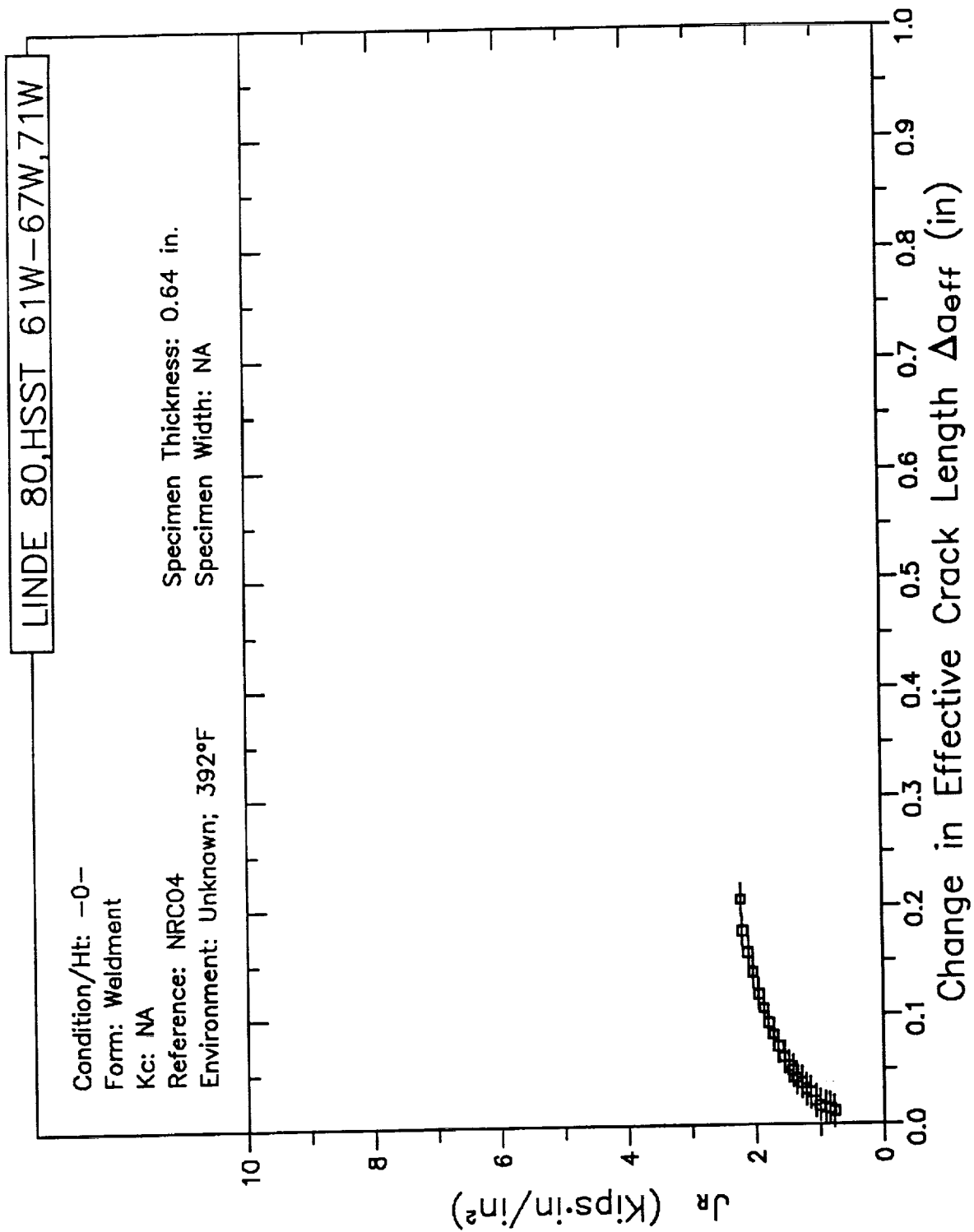


B3-354

# RESISTANCE CURVE

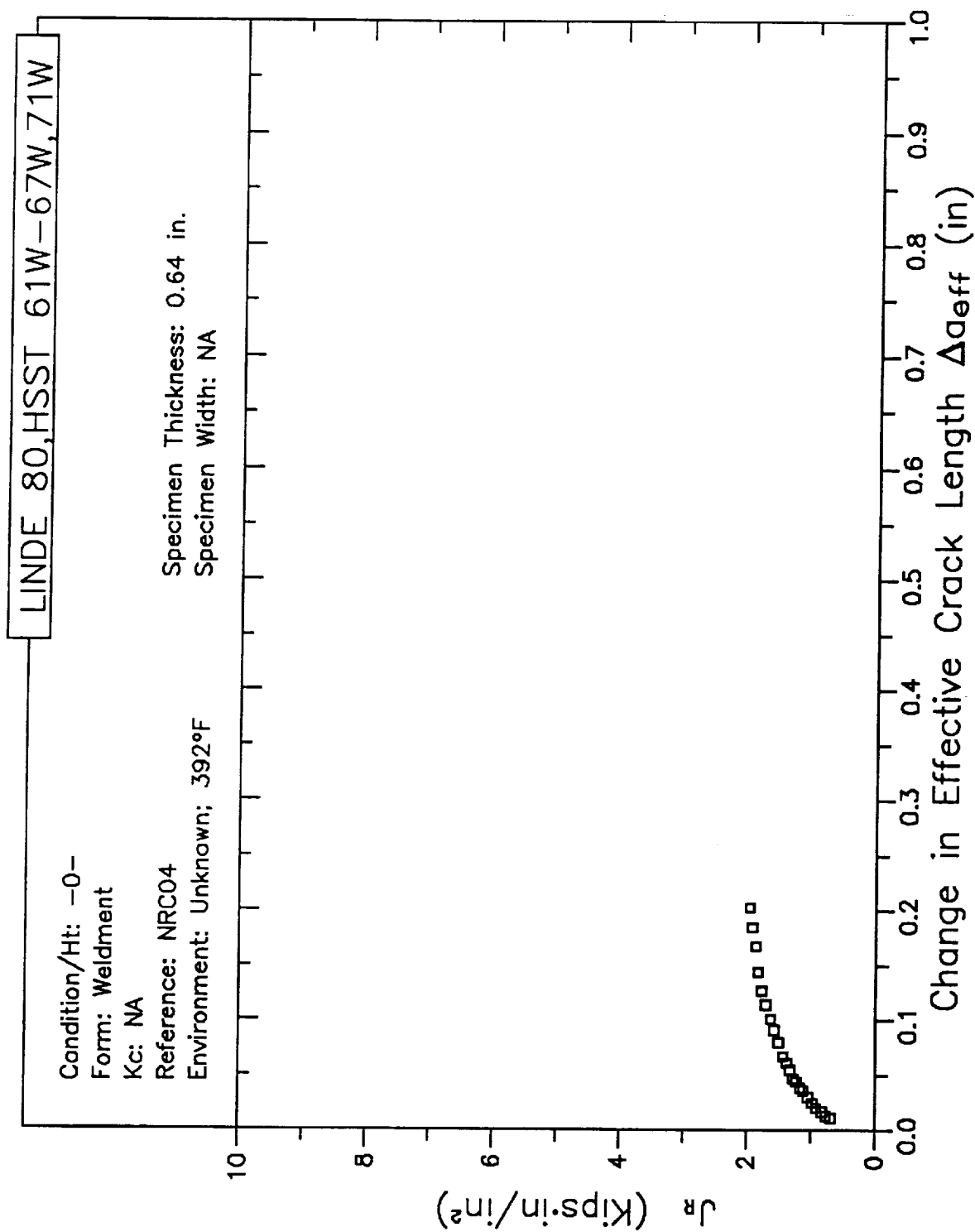


# RESISTANCE CURVE



B3-356

# RESISTANCE CURVE

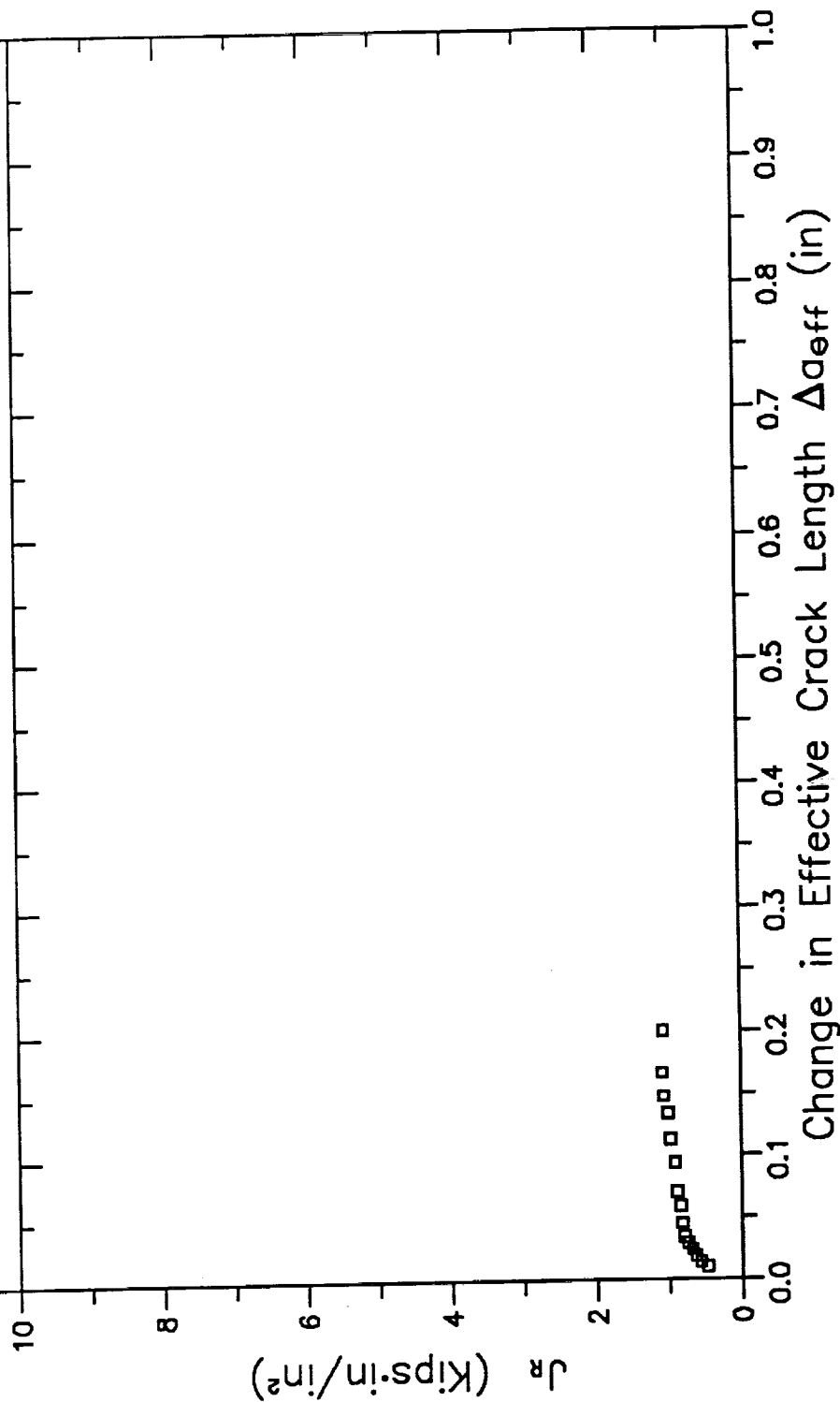


# RESISTANCE CURVE

LINDE 80,HSST 61W-67W,71W

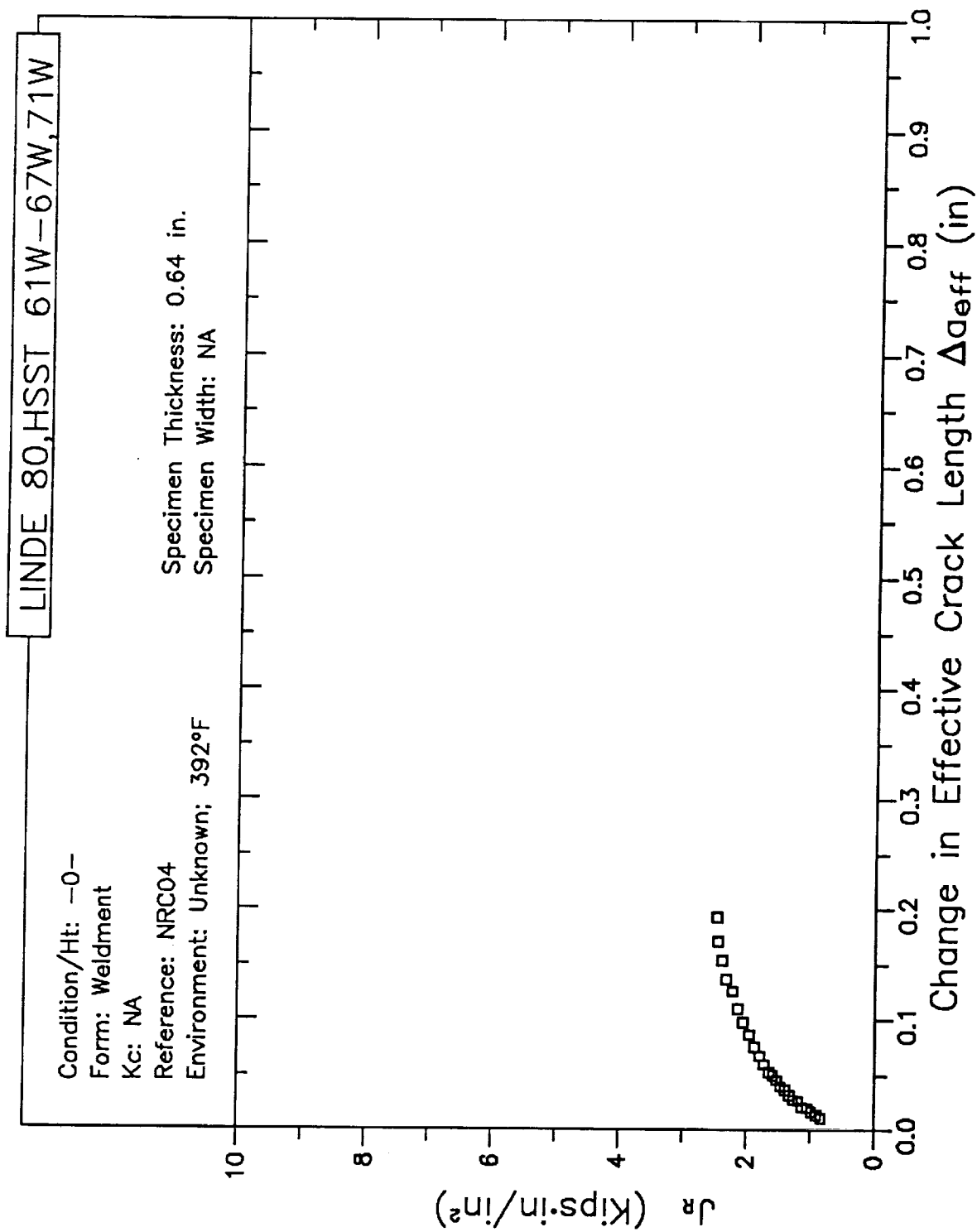
Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 392°F

Specimen Thickness: 0.64 in.  
Specimen Width: NA



B3-358

# RESISTANCE CURVE

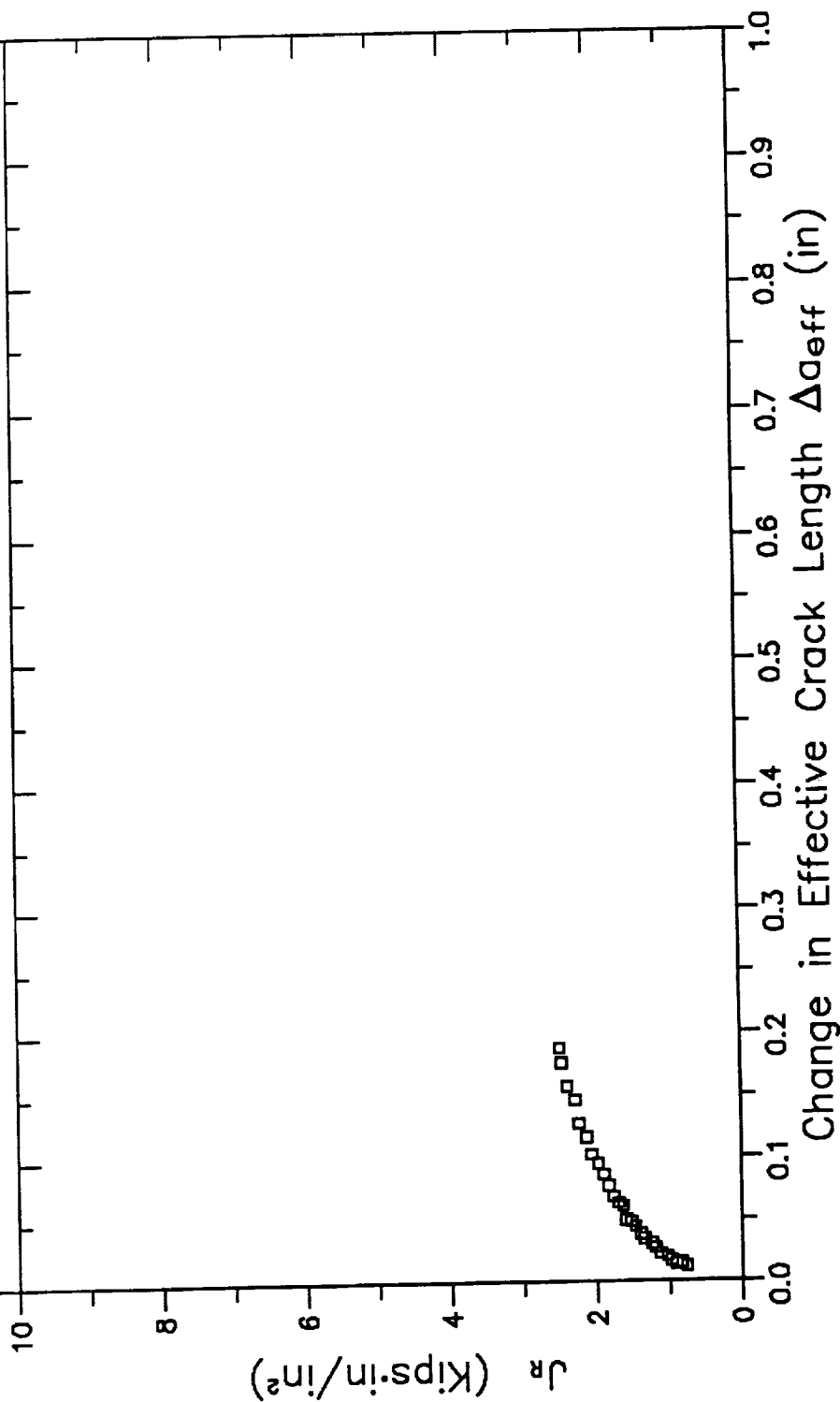


# RESISTANCE CURVE

LINDE 80,HSST 61W-67W,71W

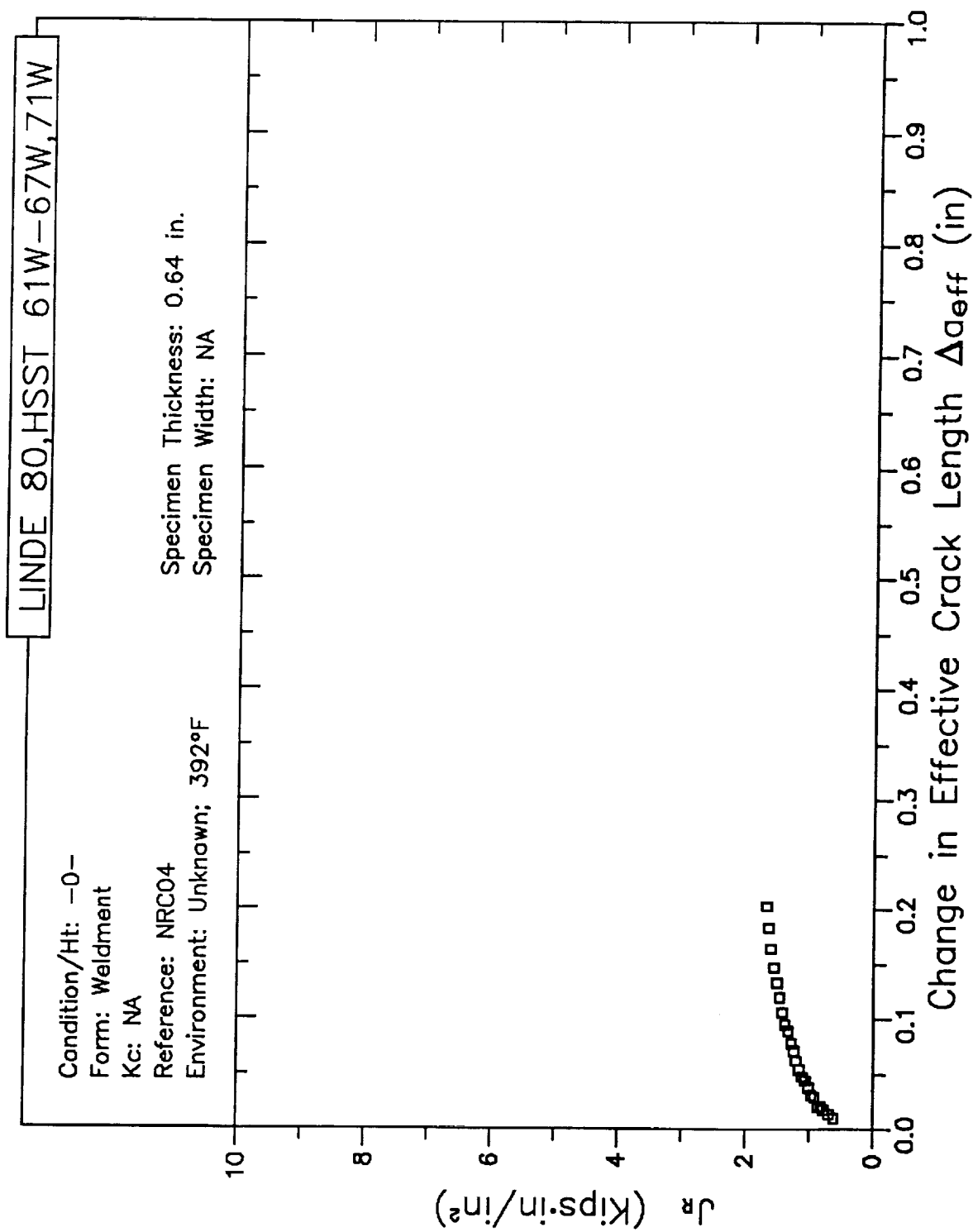
Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 392°F

Specimen Thickness: 0.64 in.  
Specimen Width: NA





# RESISTANCE CURVE

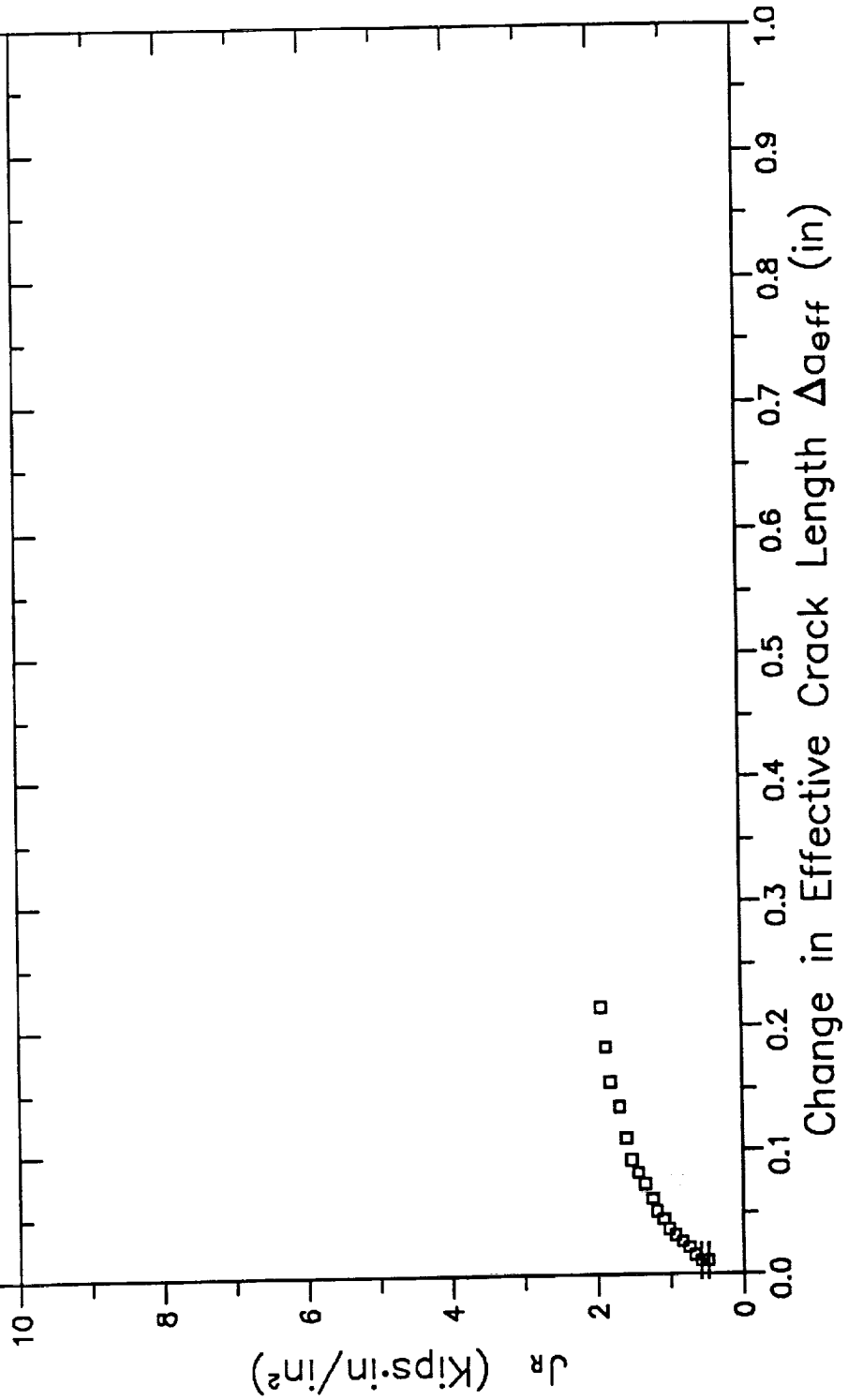


# RESISTANCE CURVE

LINDE 80,HSST 61W-67W,71W

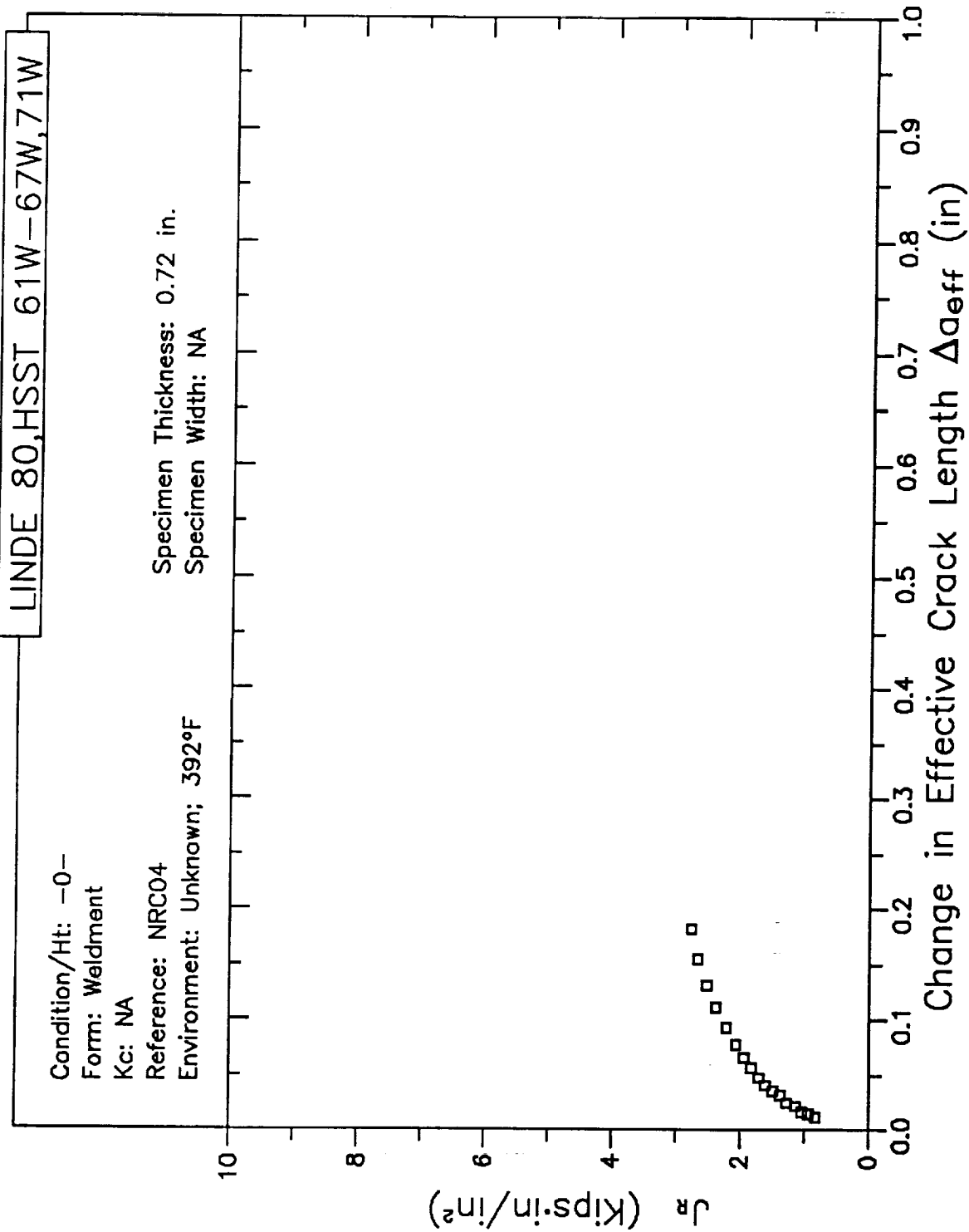
Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 392°F

Specimen Thickness: 0.72 in.  
Specimen Width: NA



B3-362

# RESISTANCE CURVE

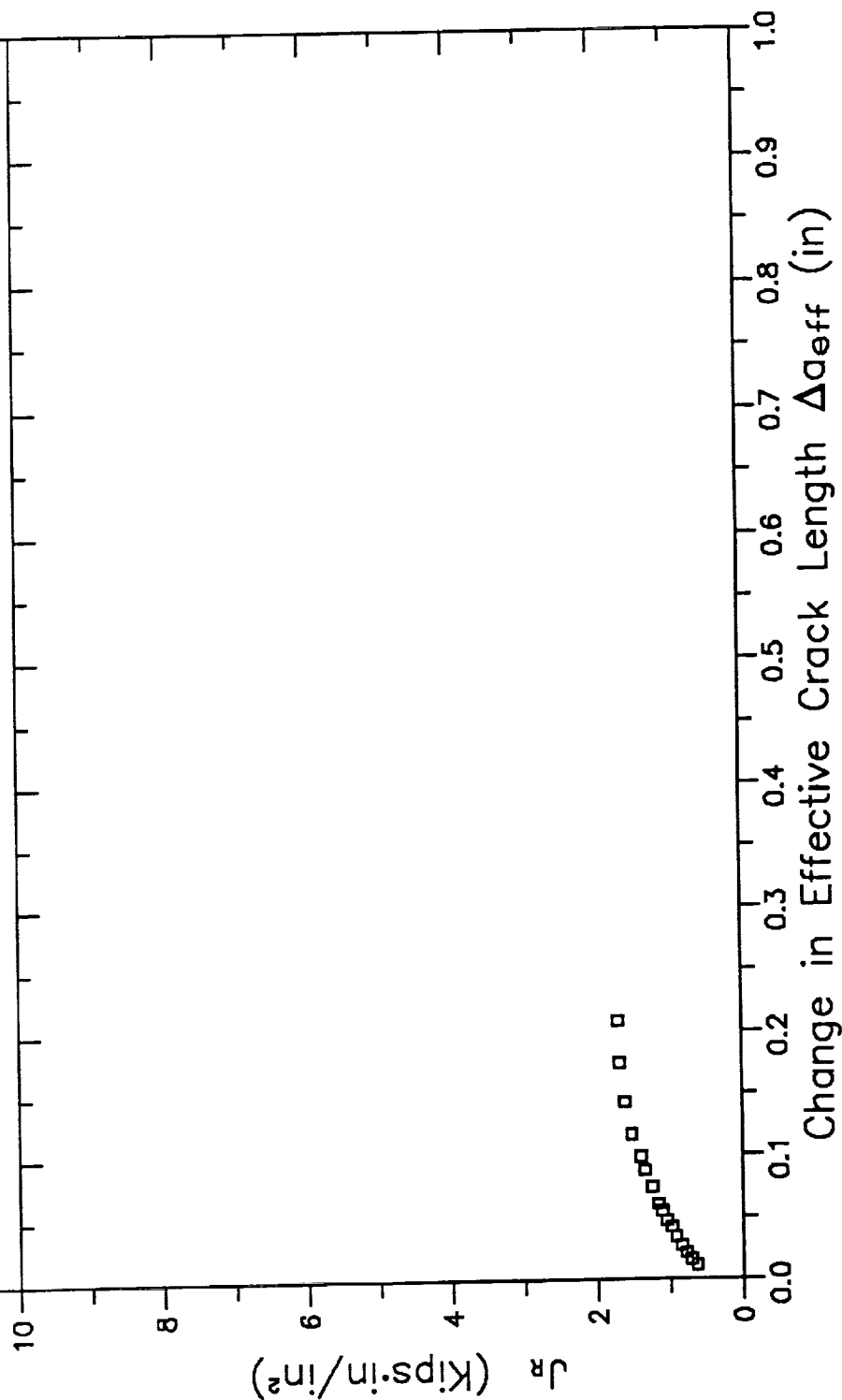


# RESISTANCE CURVE

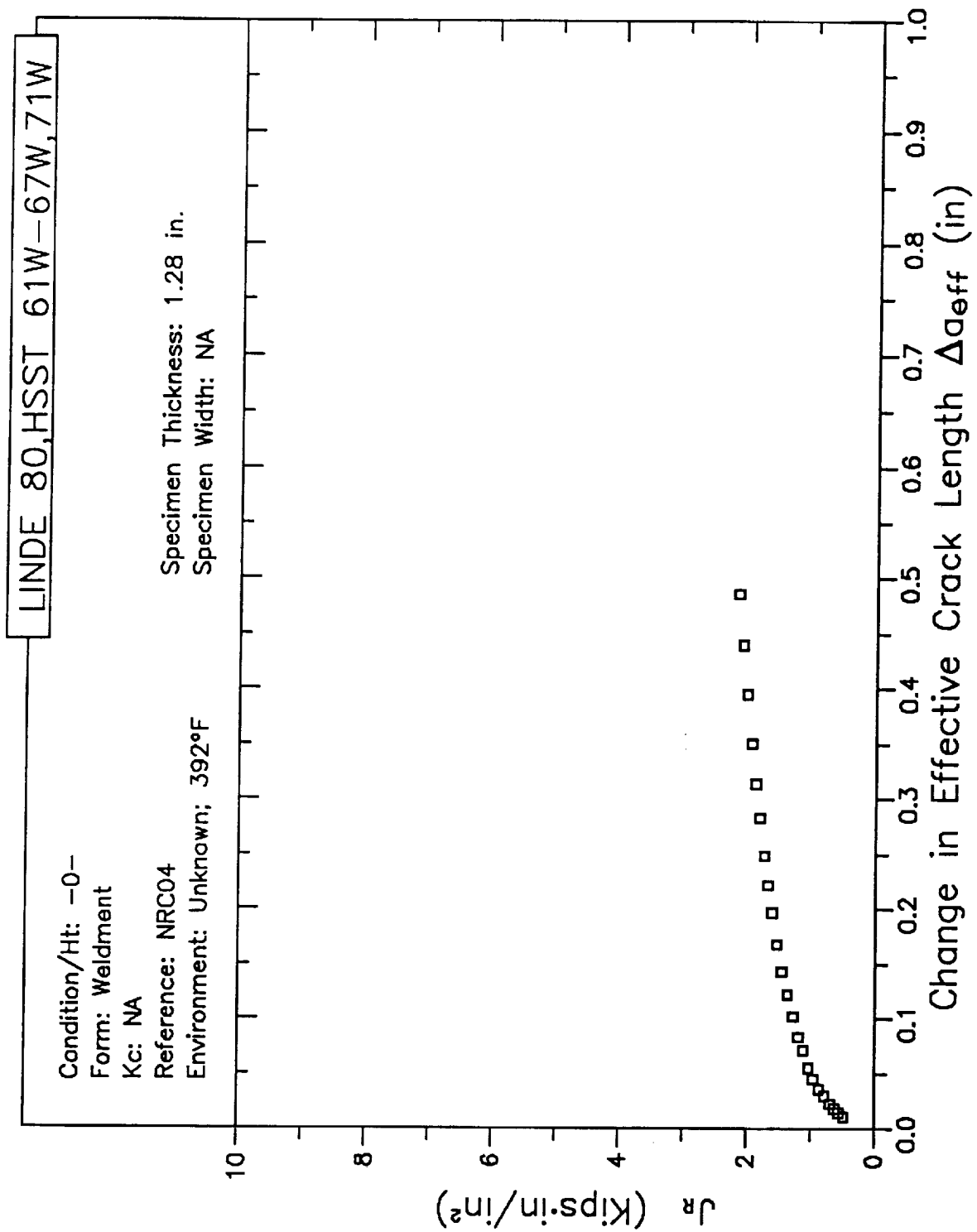
LINDE 80,HSST 61W-67W,71W

Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 392°F

Specimen Thickness: 0.72 in.  
Specimen Width: NA



# RESISTANCE CURVE

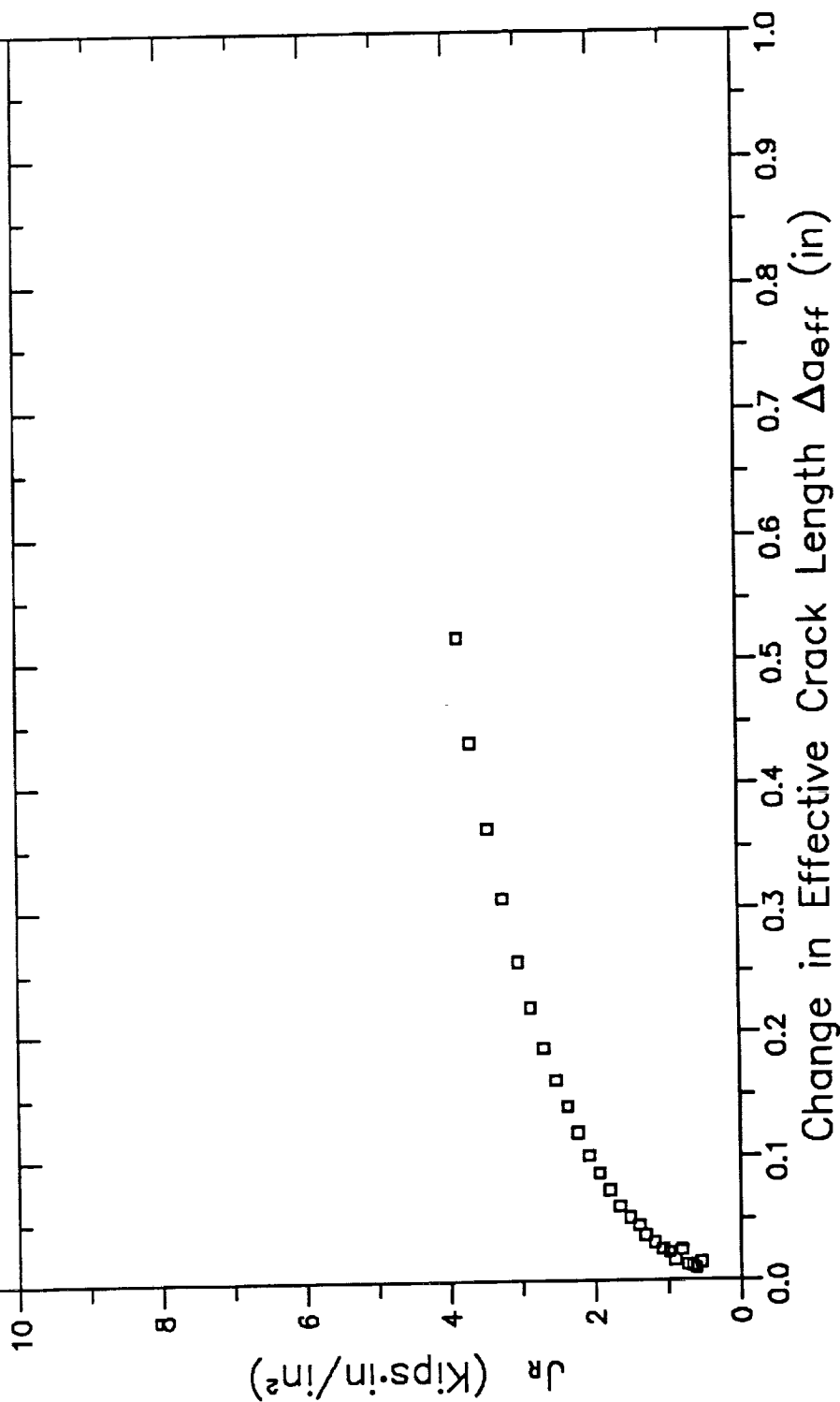


# RESISTANCE CURVE

LINDE 80,HSST 61W-67W,71W

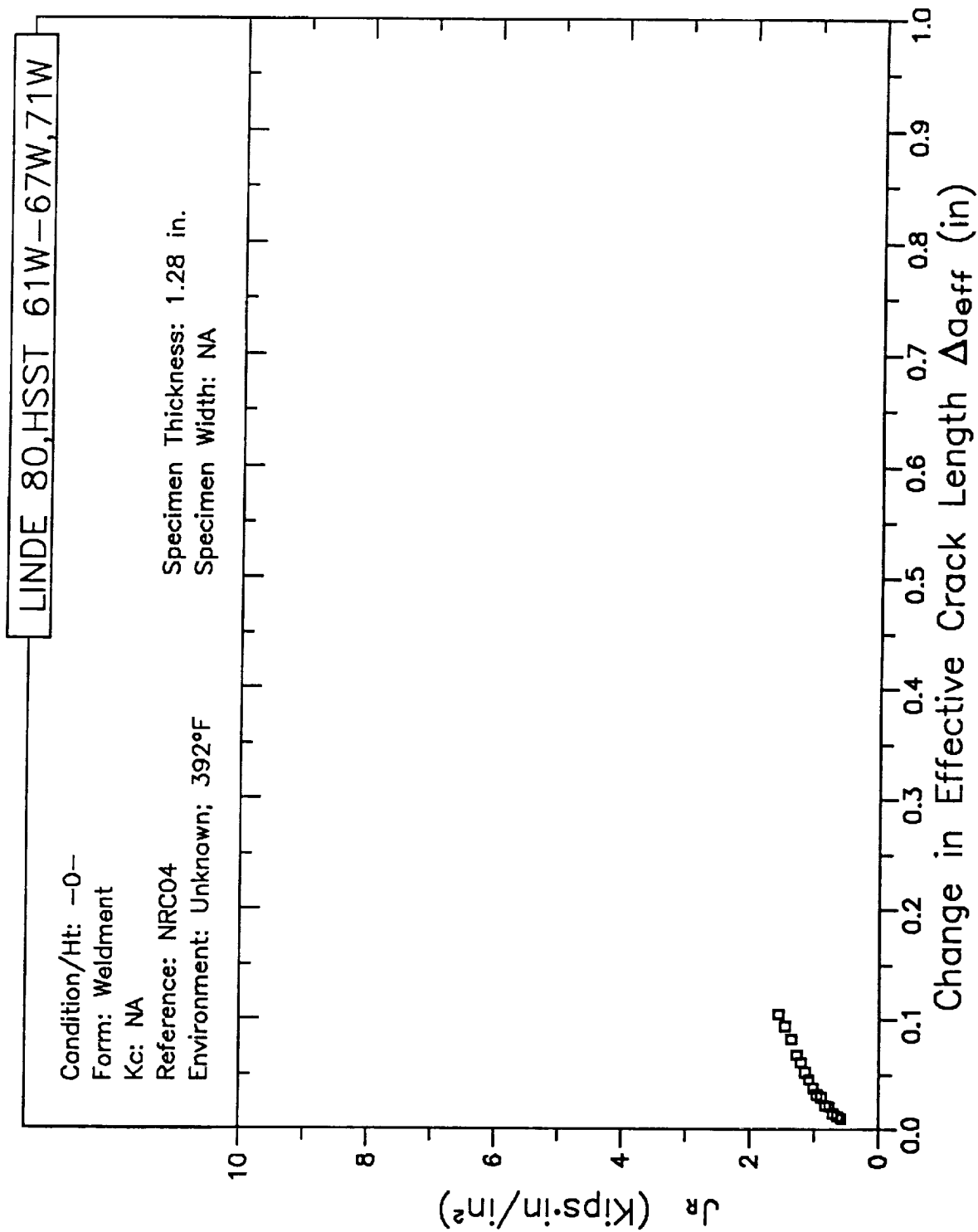
Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 392°F

Specimen Thickness: 1.28 in.  
Specimen Width: NA



B3-366

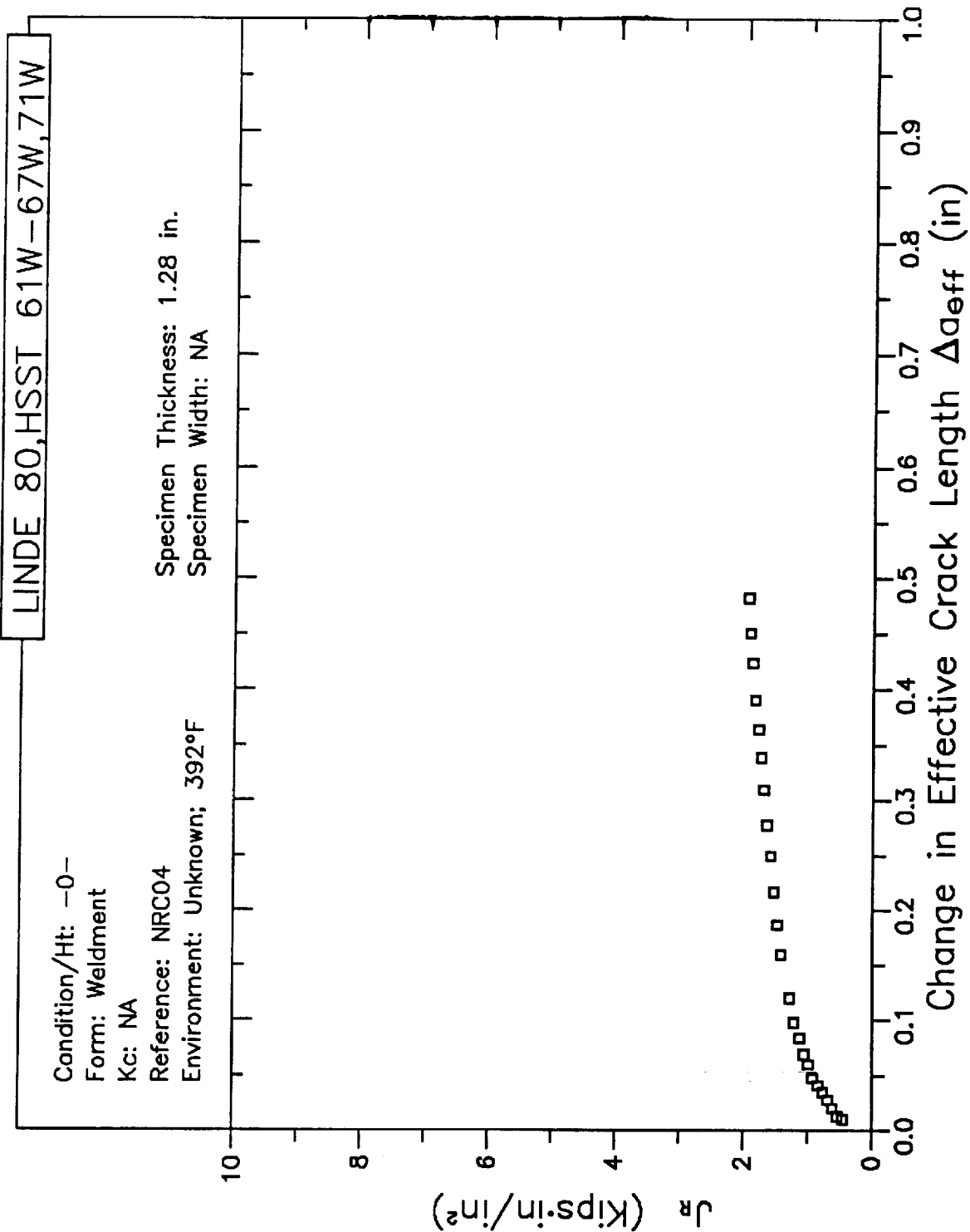
# RESISTANCE CURVE



B3-368



# RESISTANCE CURVE



B3-369

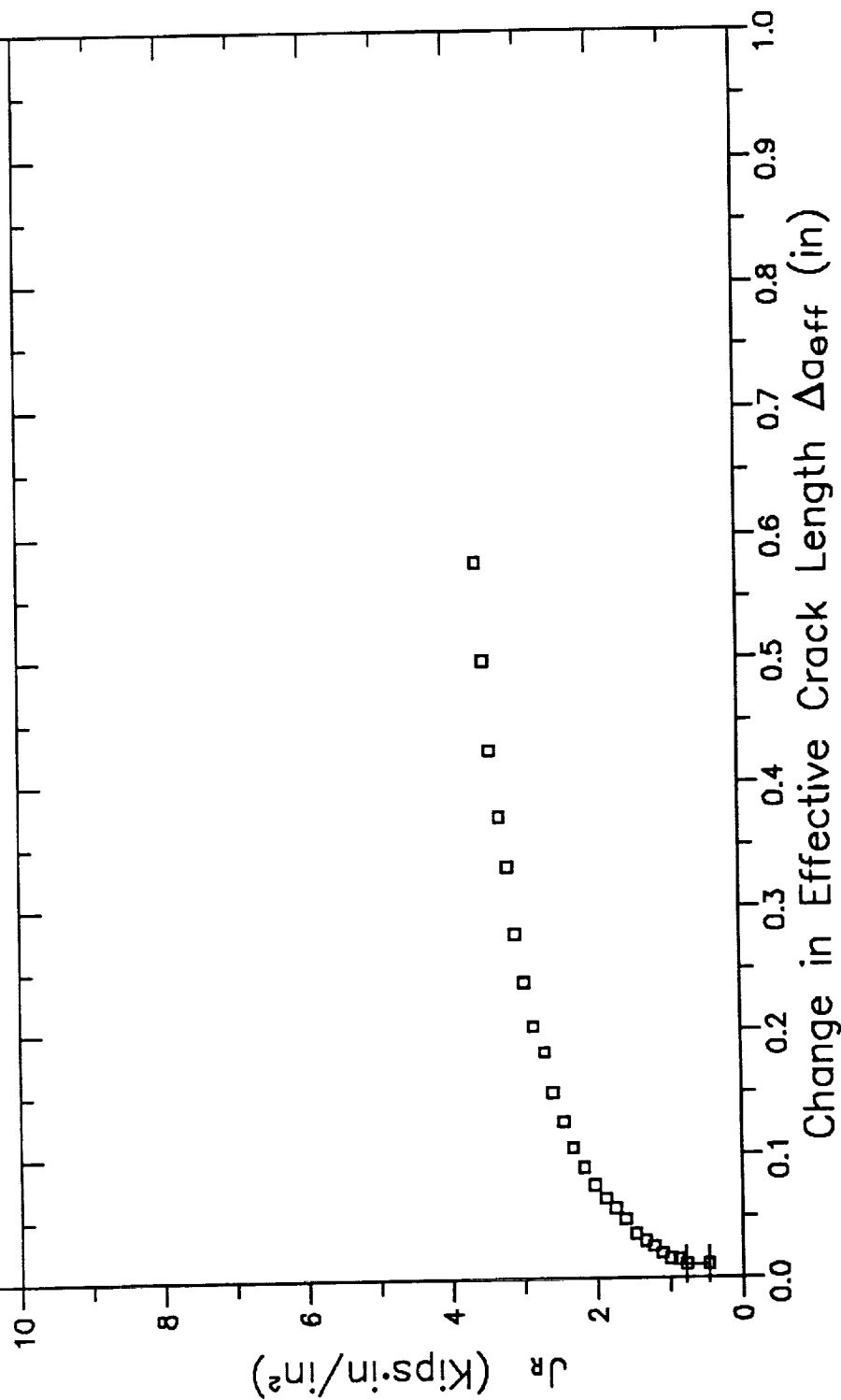
PRECEDING PAGE BLANK NOT FILMED

# RESISTANCE CURVE

LINDE 80, HSST 61W-67W, 71W

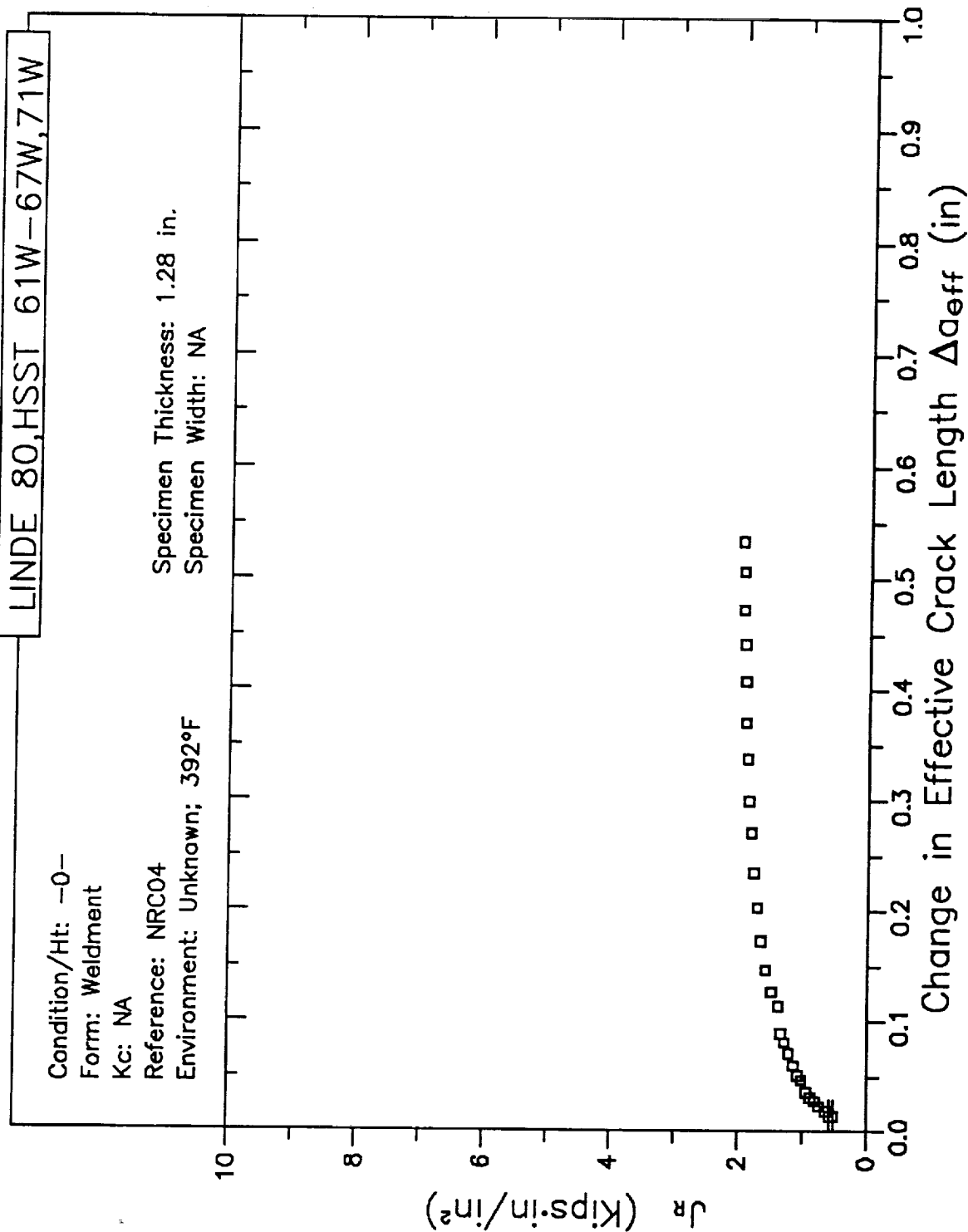
Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 392°F

Specimen Thickness: 1.28 in.  
Specimen Width: NA



B3-370

# RESISTANCE CURVE

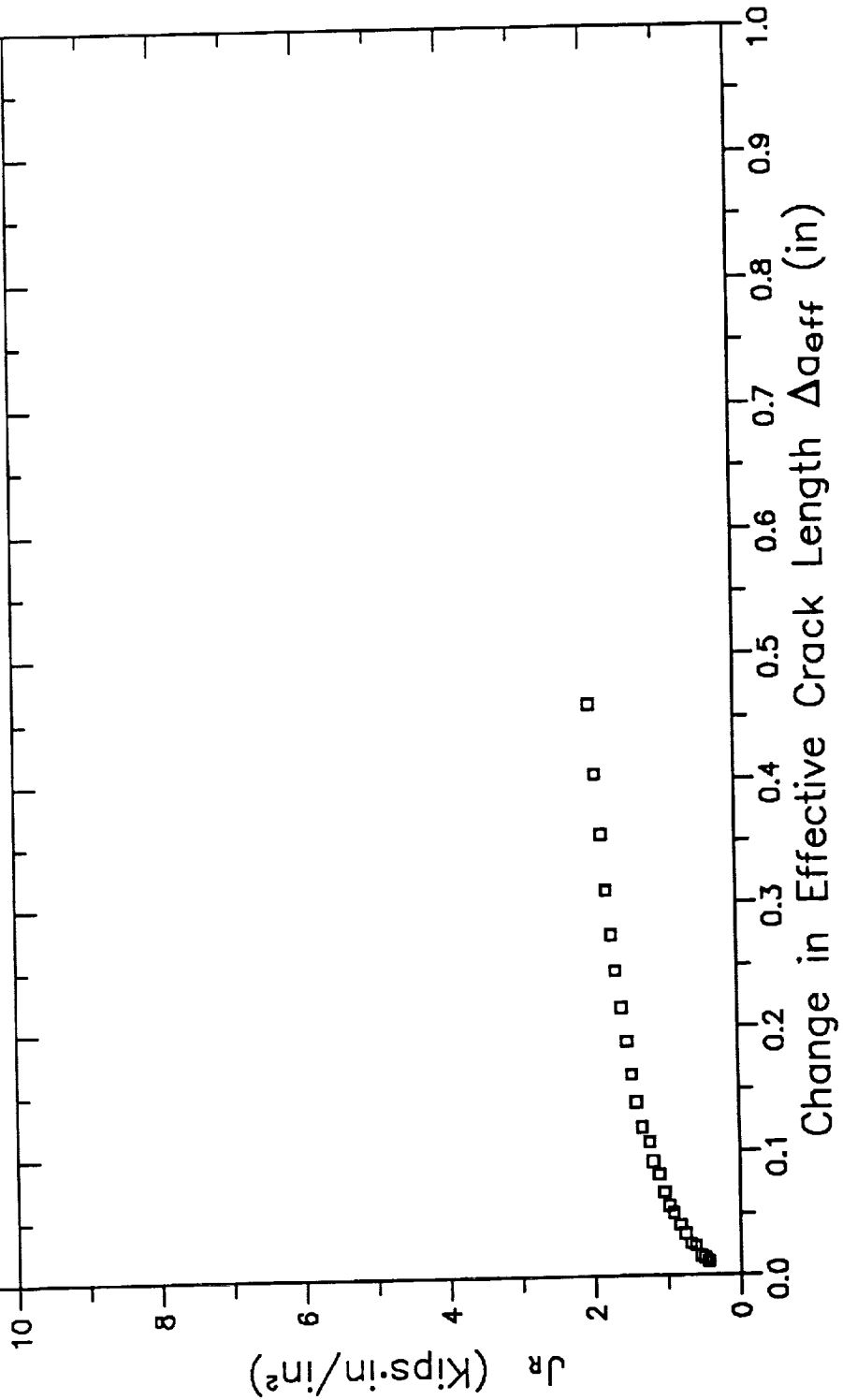


# RESISTANCE CURVE

LINDE 80, HSST 61W-67W, 71W

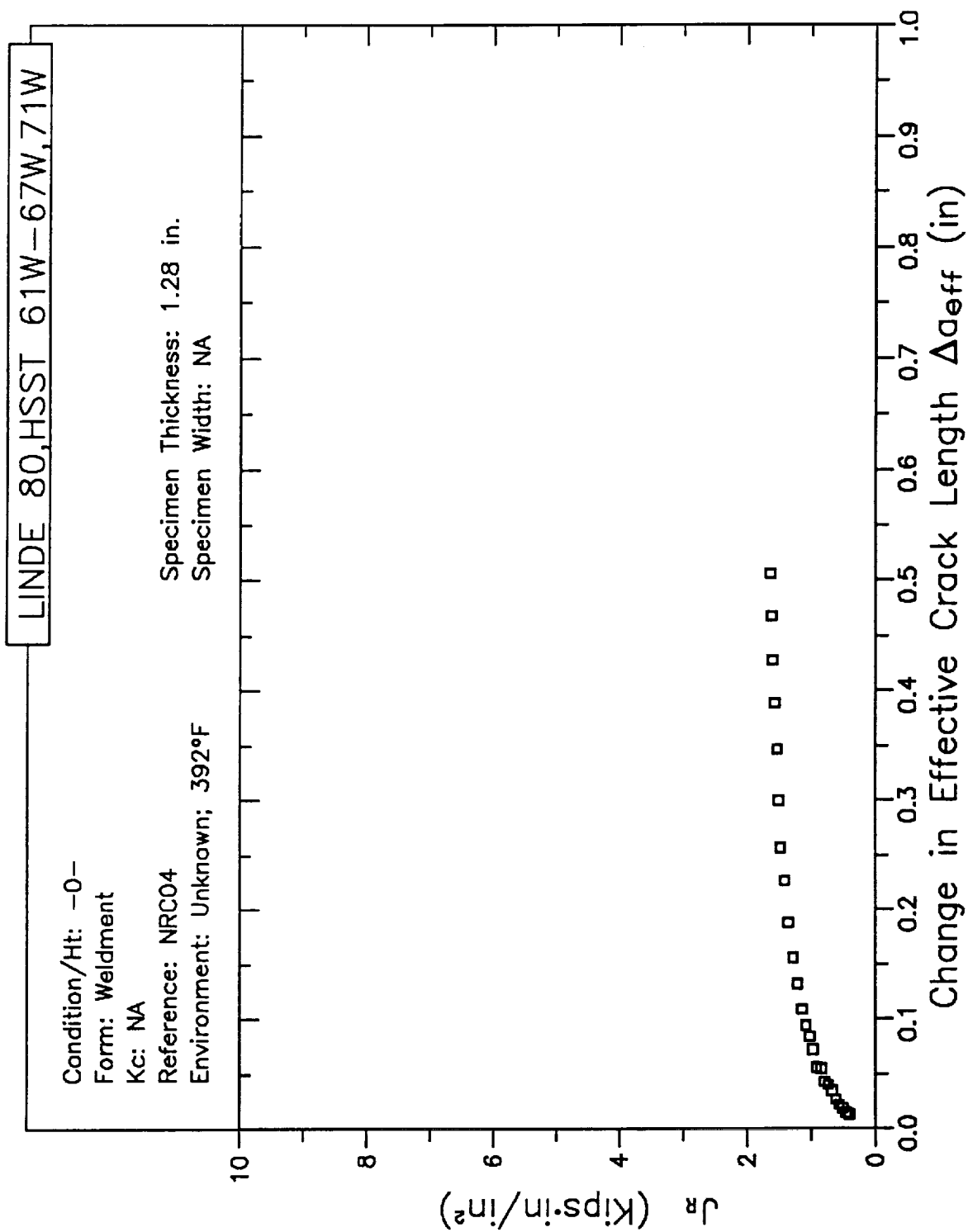
Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 392°F

Specimen Thickness: 1.28 in.  
Specimen Width: NA



B3-372

# RESISTANCE CURVE

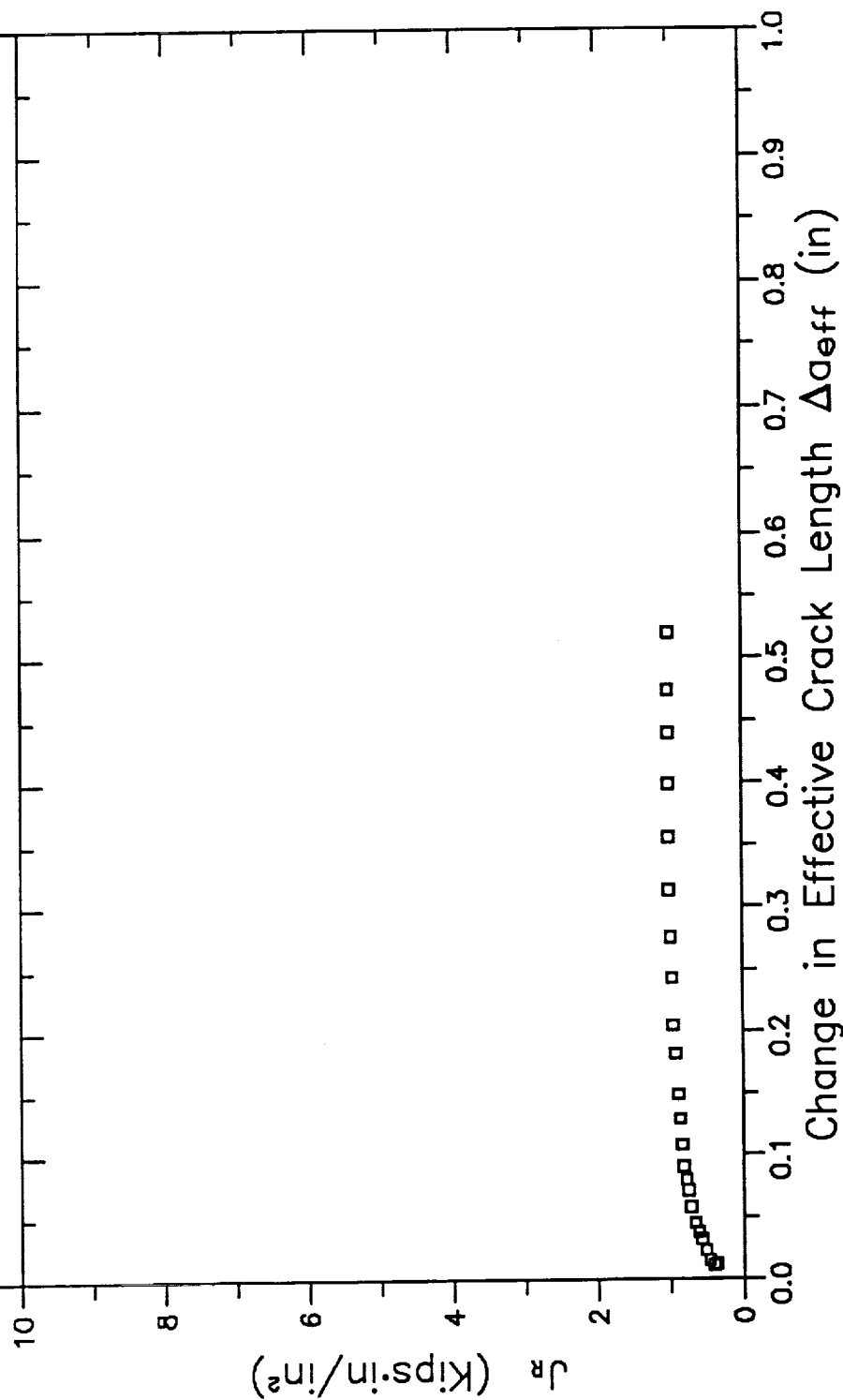


# RESISTANCE CURVE

LINDE 80,HSST 61W-67W,71W

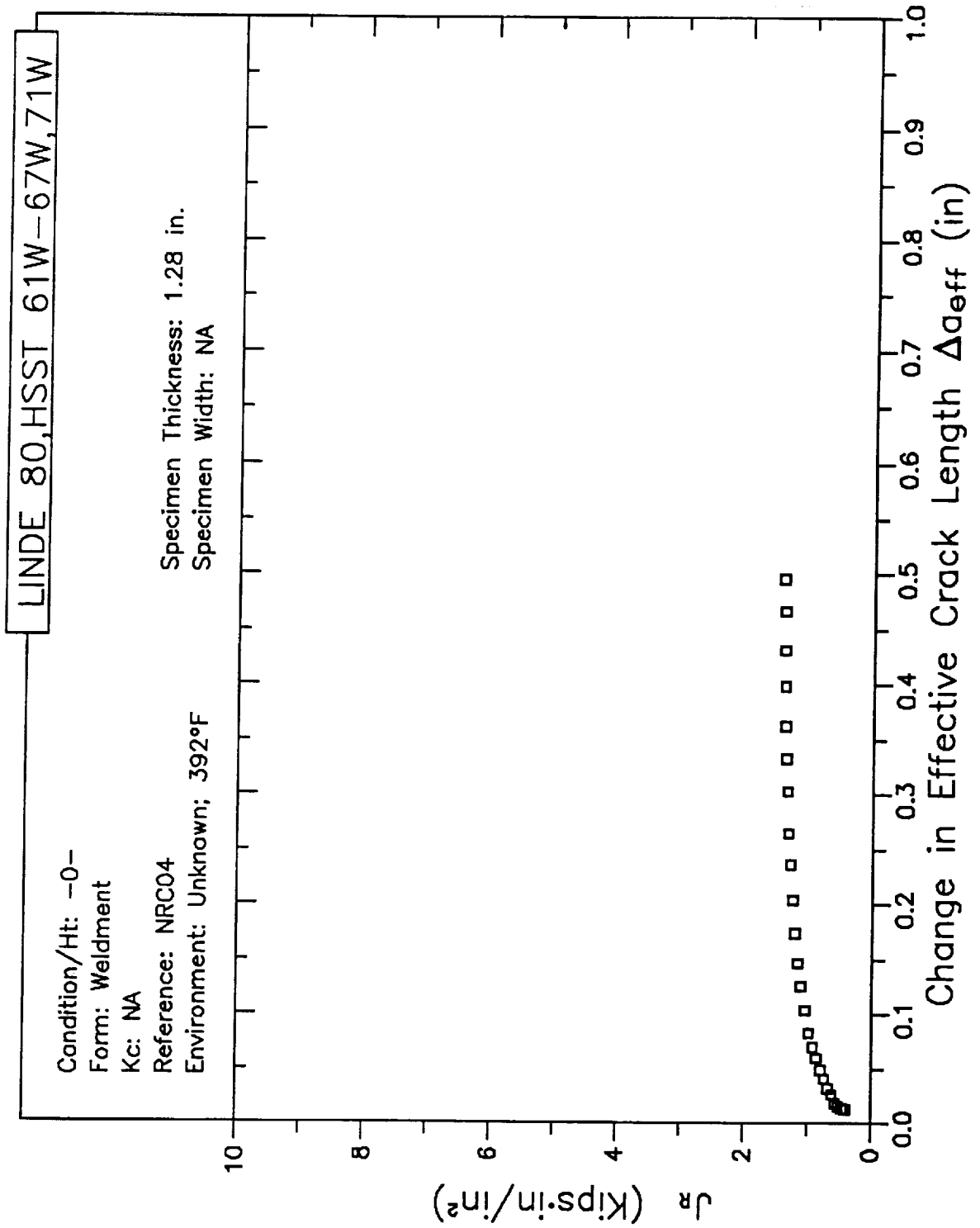
Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 392°F

Specimen Thickness: 1.28 in.  
Specimen Width: NA



B3-374

# RESISTANCE CURVE

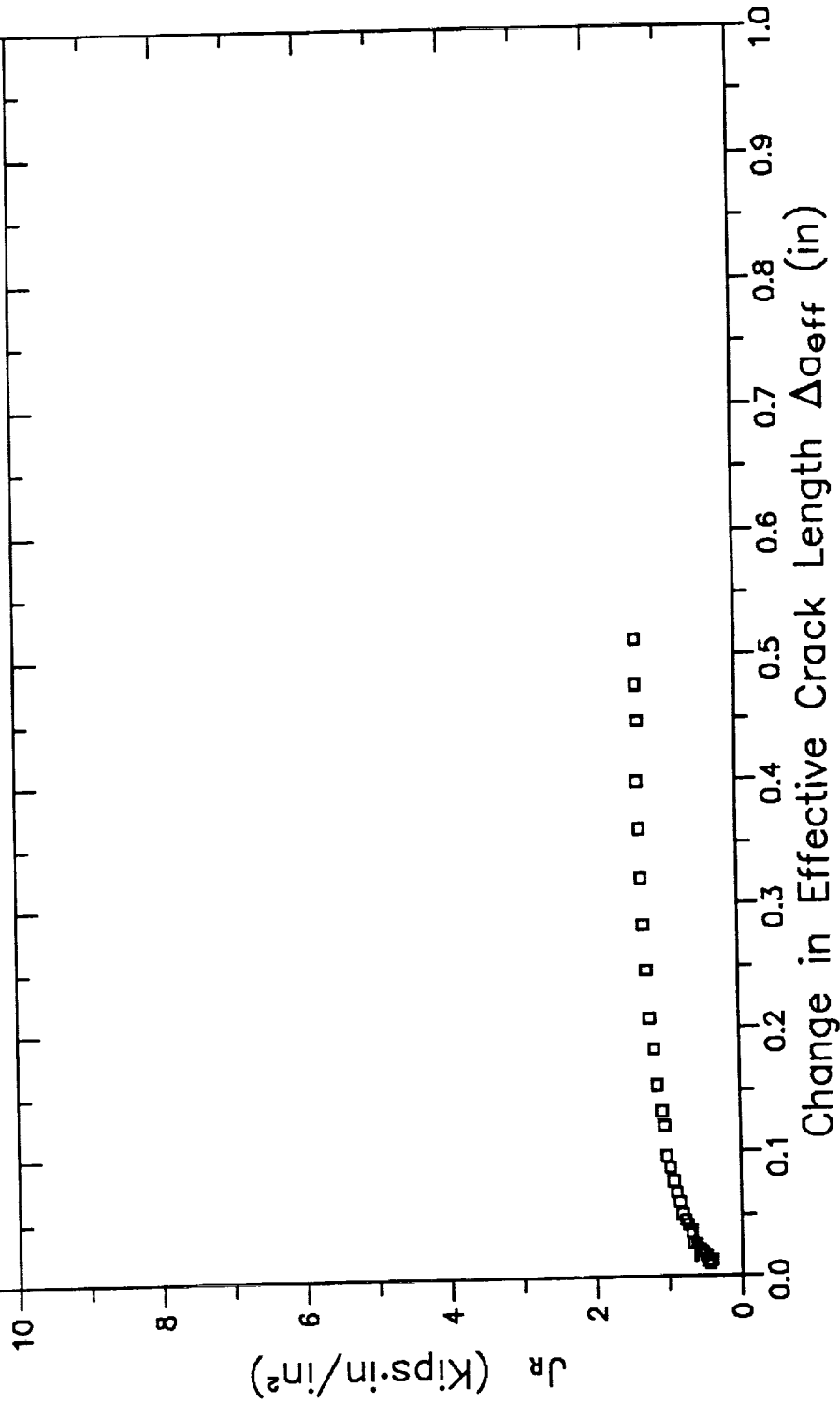


# RESISTANCE CURVE

LINDE 80, HSST 61W-67W, 71W

Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 392°F

Specimen Thickness: 1.28 in.  
Specimen Width: NA



B3-376



# RESISTANCE CURVE

LINDE 80,HSST 61W-67W,71W

Condition/Ht: -0-

Form: Weldment

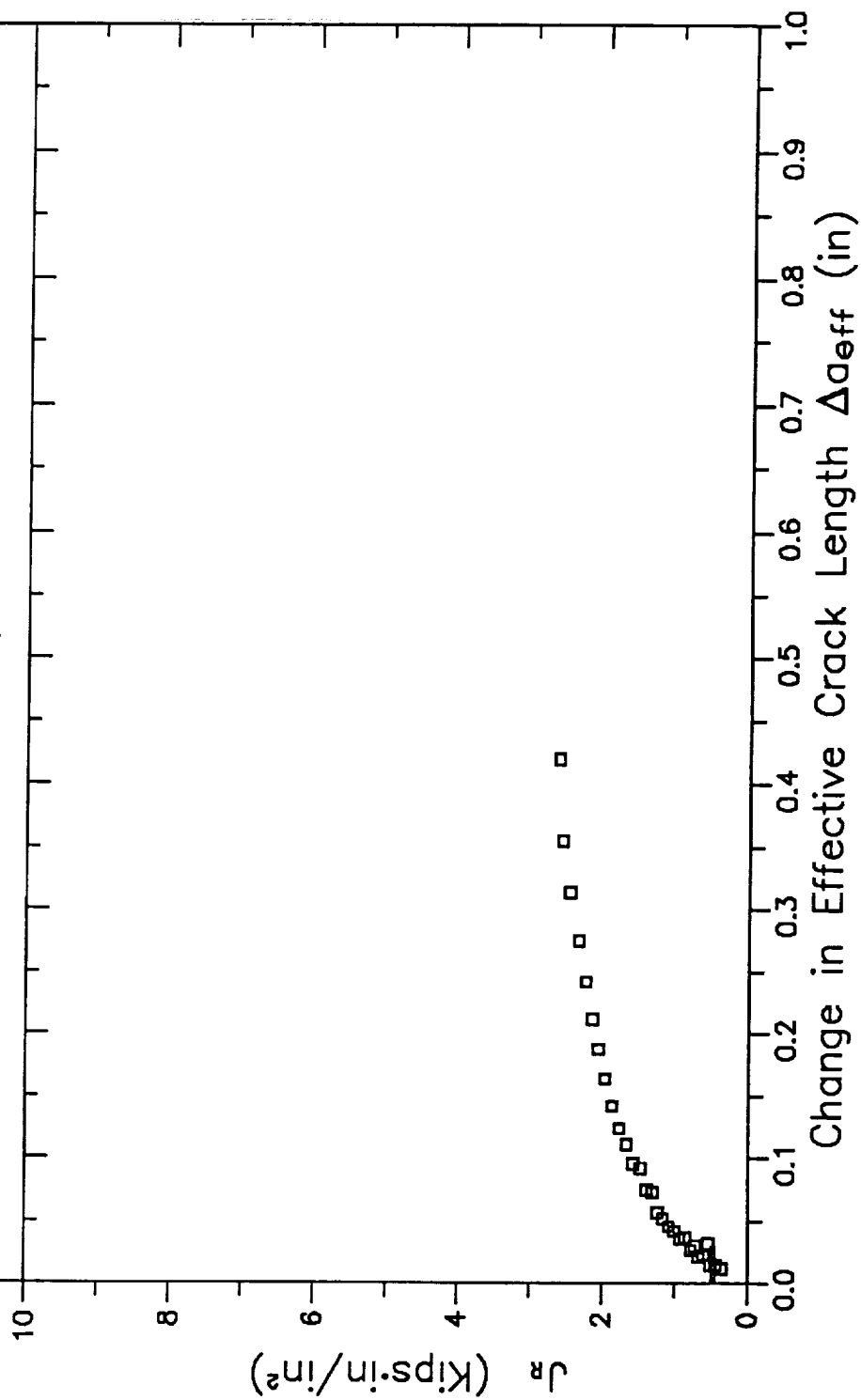
Kc: NA

Reference: NRC04

Environment: Unknown; 392°F

Specimen Thickness: 1.28 in.

Specimen Width: NA

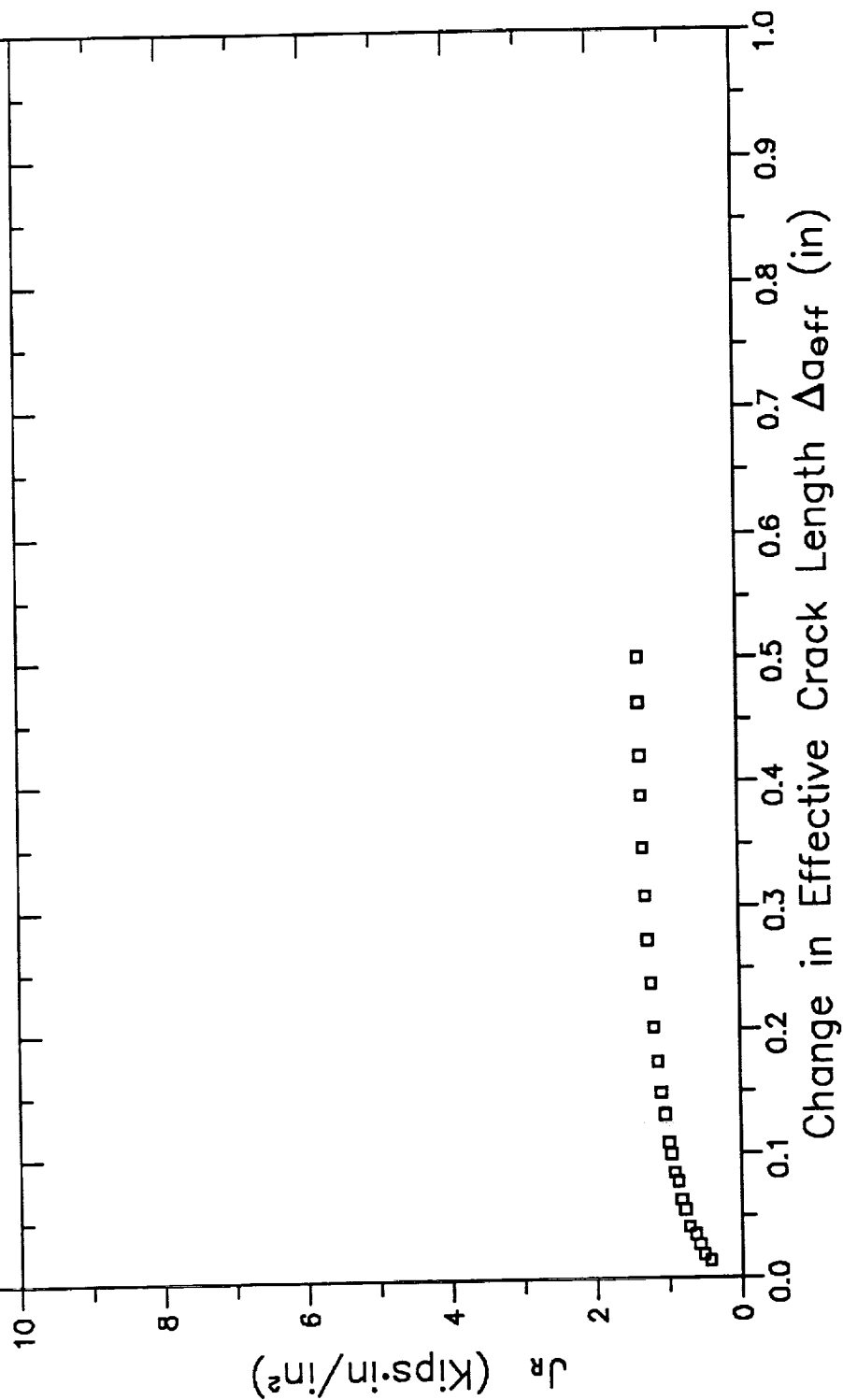


# RESISTANCE CURVE

LINDE 80,HSST 61W-67W,71W

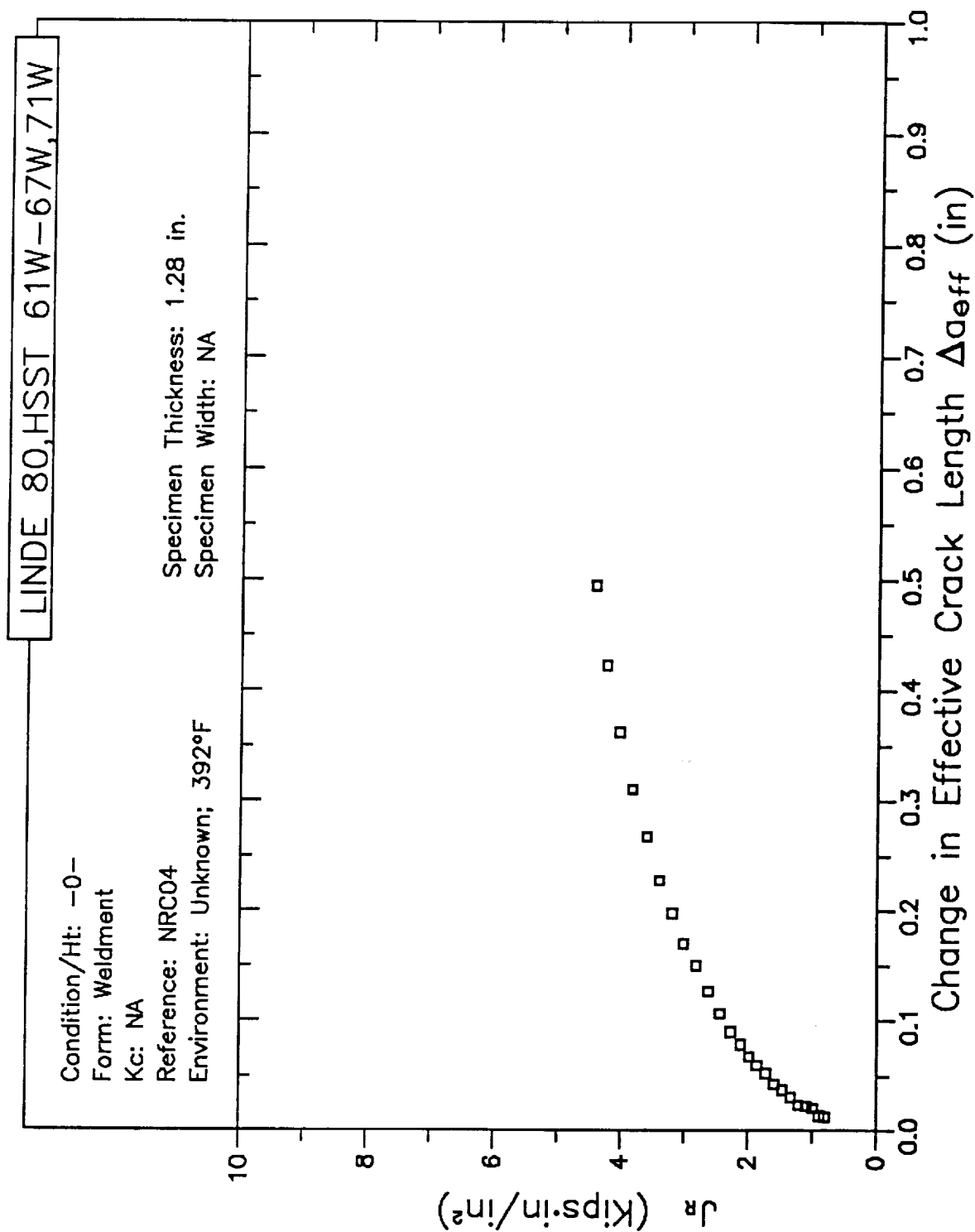
Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 392°F

Specimen Thickness: 1.28 in.  
Specimen Width: NA



B3-378

# RESISTANCE CURVE

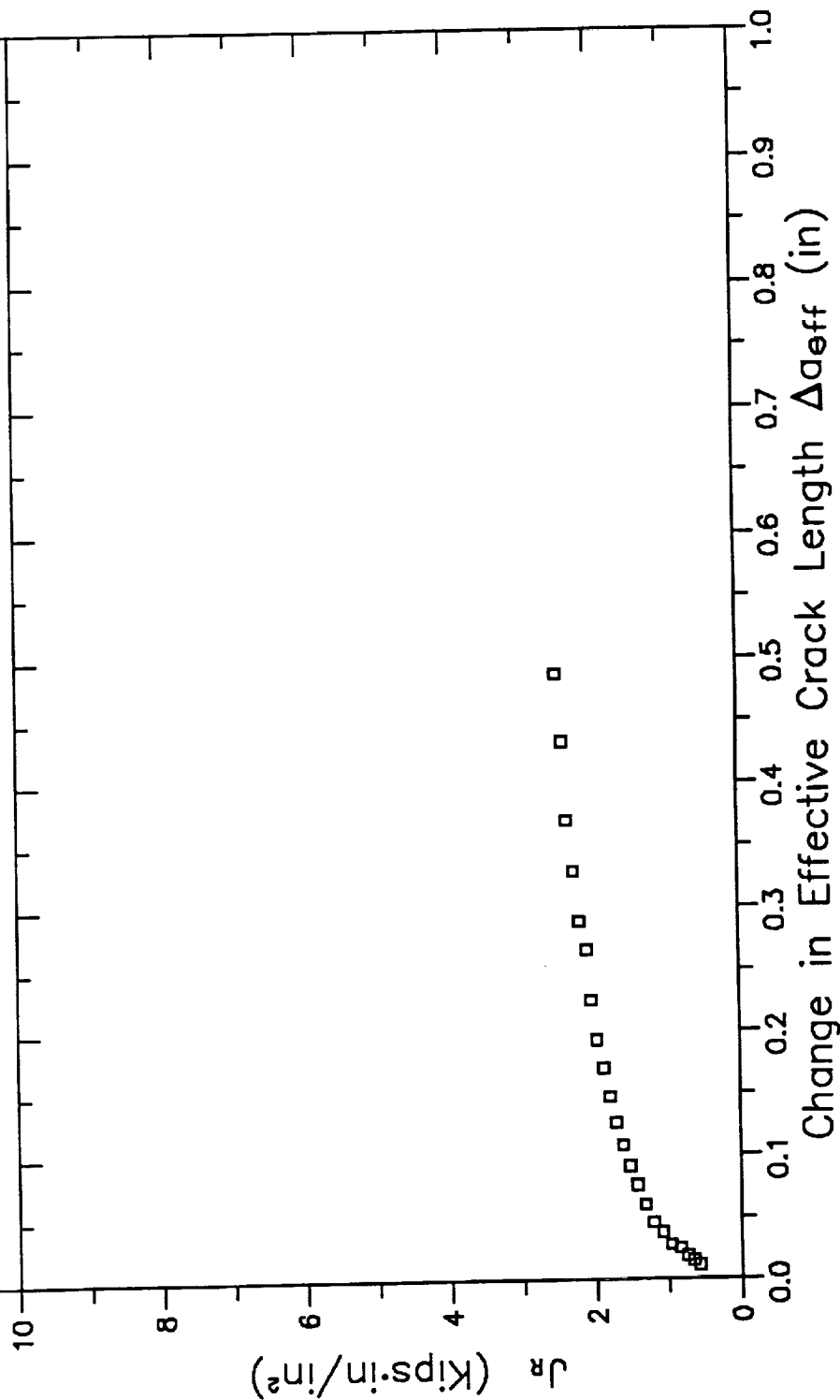


# RESISTANCE CURVE

LINDE 80,HSST 61W-67W,71W

Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 392°F

Specimen Thickness: 1.28 in.  
Specimen Width: NA



# RESISTANCE CURVE

LINDE 80,HSST 61W-67W,71W

Condition/Ht: -0-

Form: Weldment

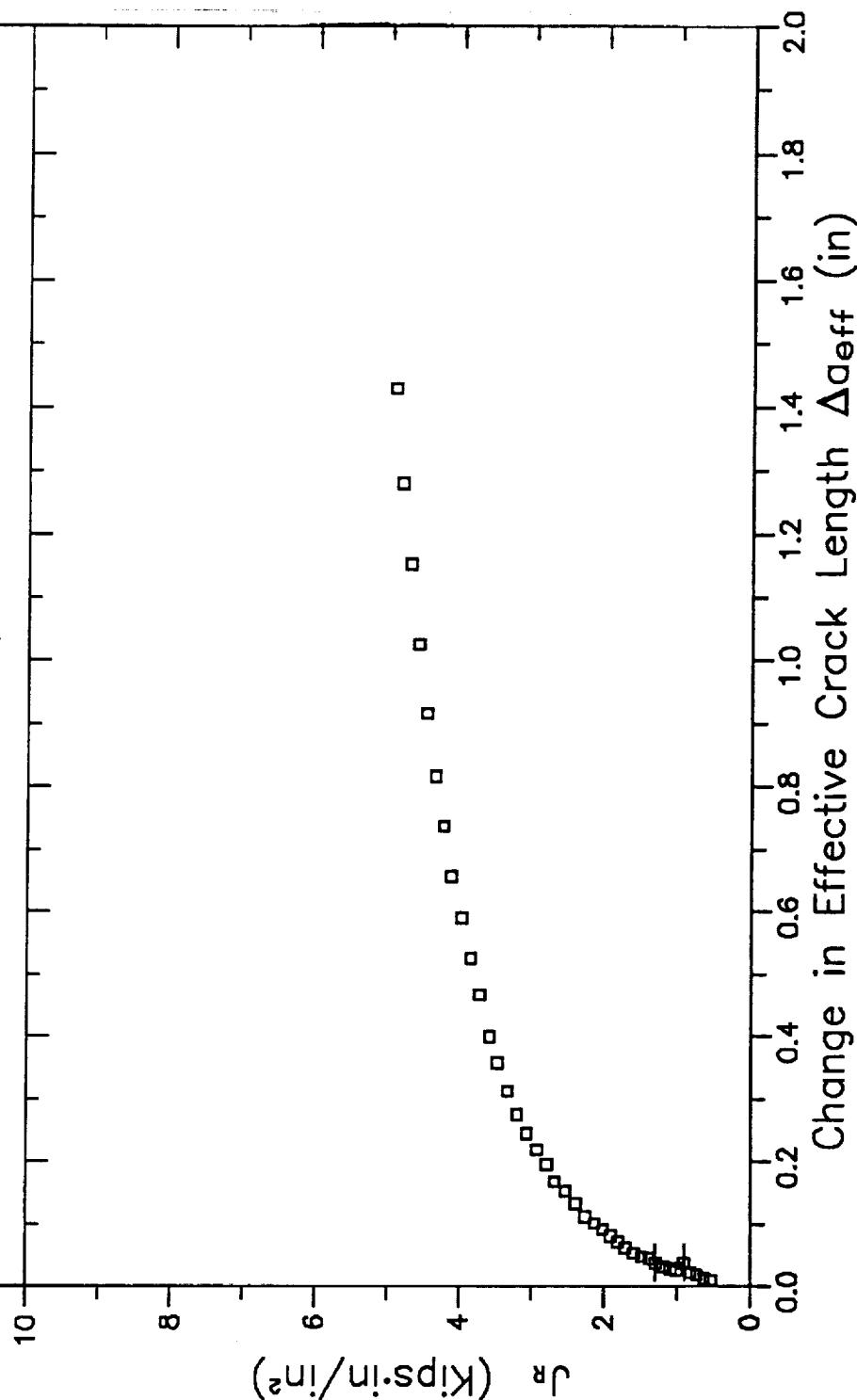
Kc: NA

Reference: NRC04

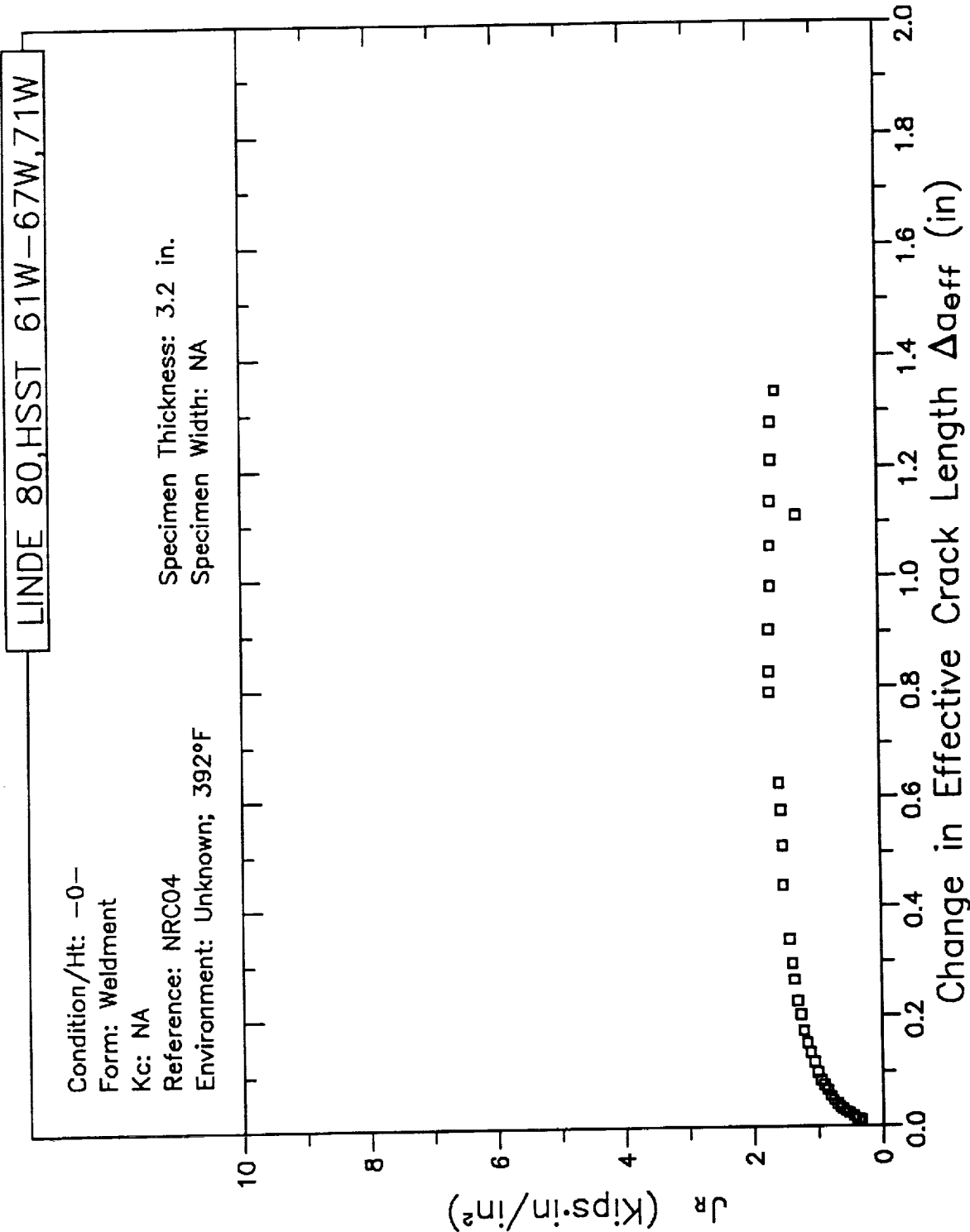
Environment: Unknown; 392°F

Specimen Thickness: 3.2 in.

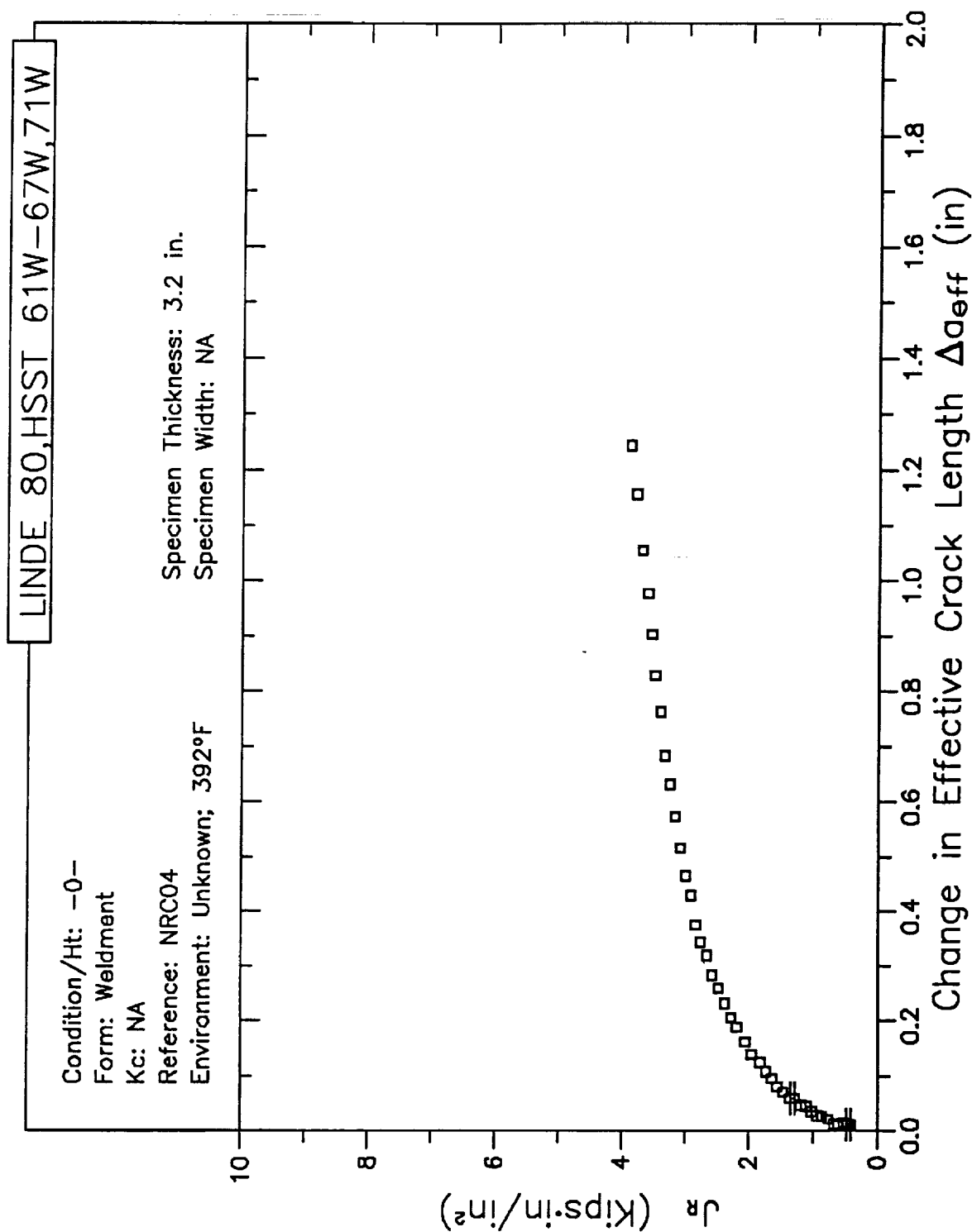
Specimen Width: NA



# RESISTANCE CURVE



# RESISTANCE CURVE



# RESISTANCE CURVE

LINDE 80,HSST 61W-67W,71W

Condition/Ht: -0-

Form: Weldment

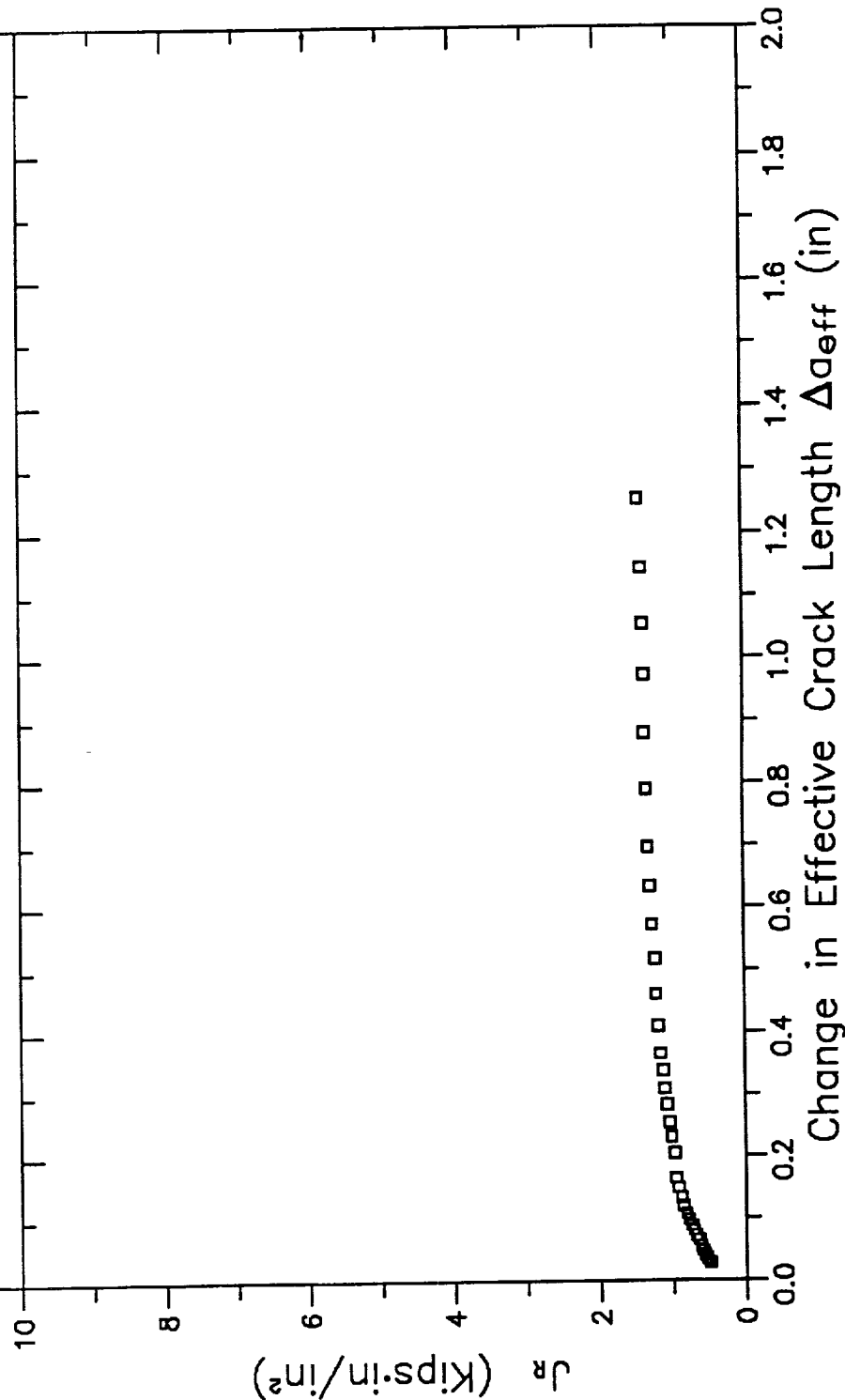
Kc: NA

Reference: NRC04

Environment: Unknown; 392°F

Specimen Thickness: 3.2 in.

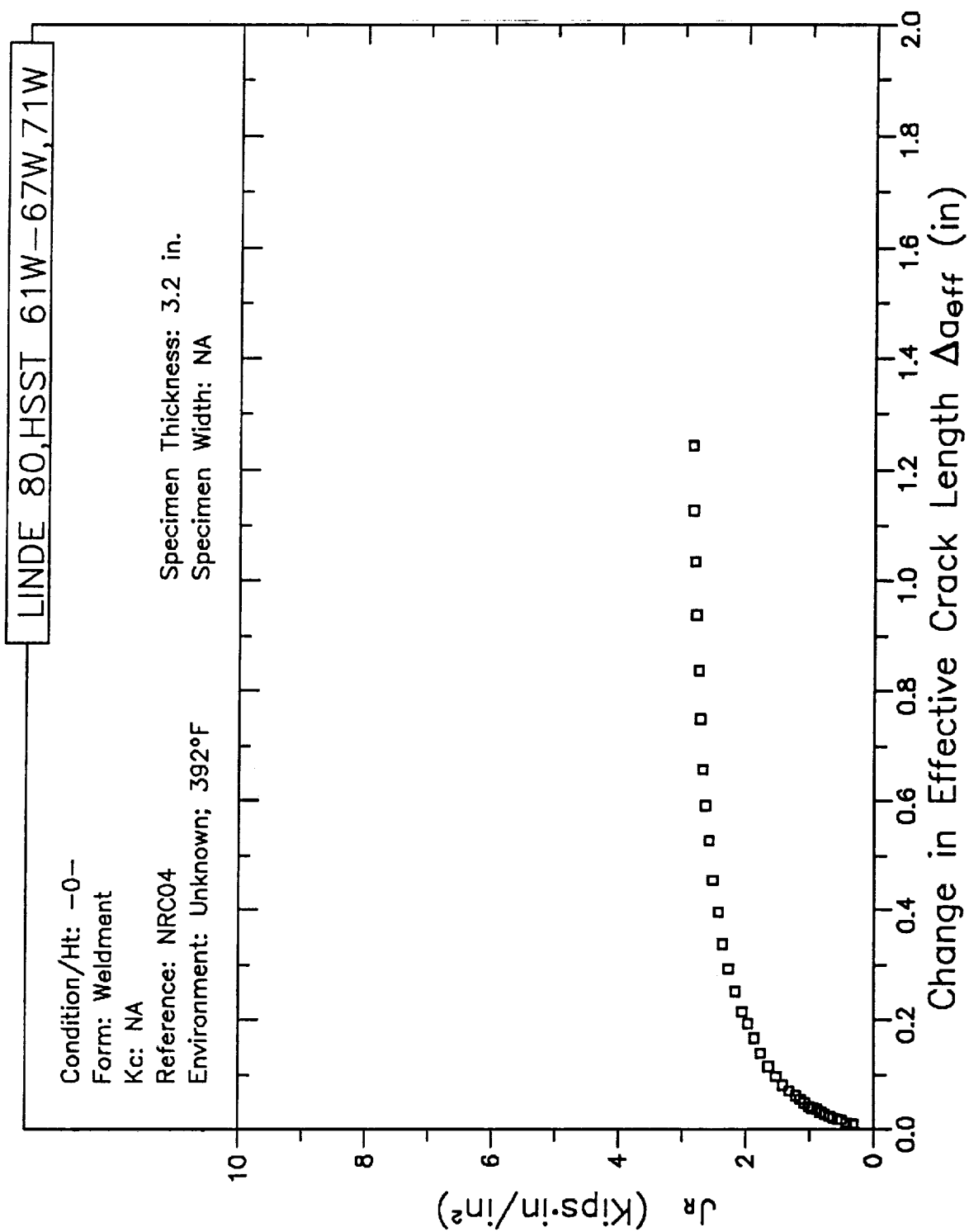
Specimen Width: NA



B3-384



# RESISTANCE CURVE

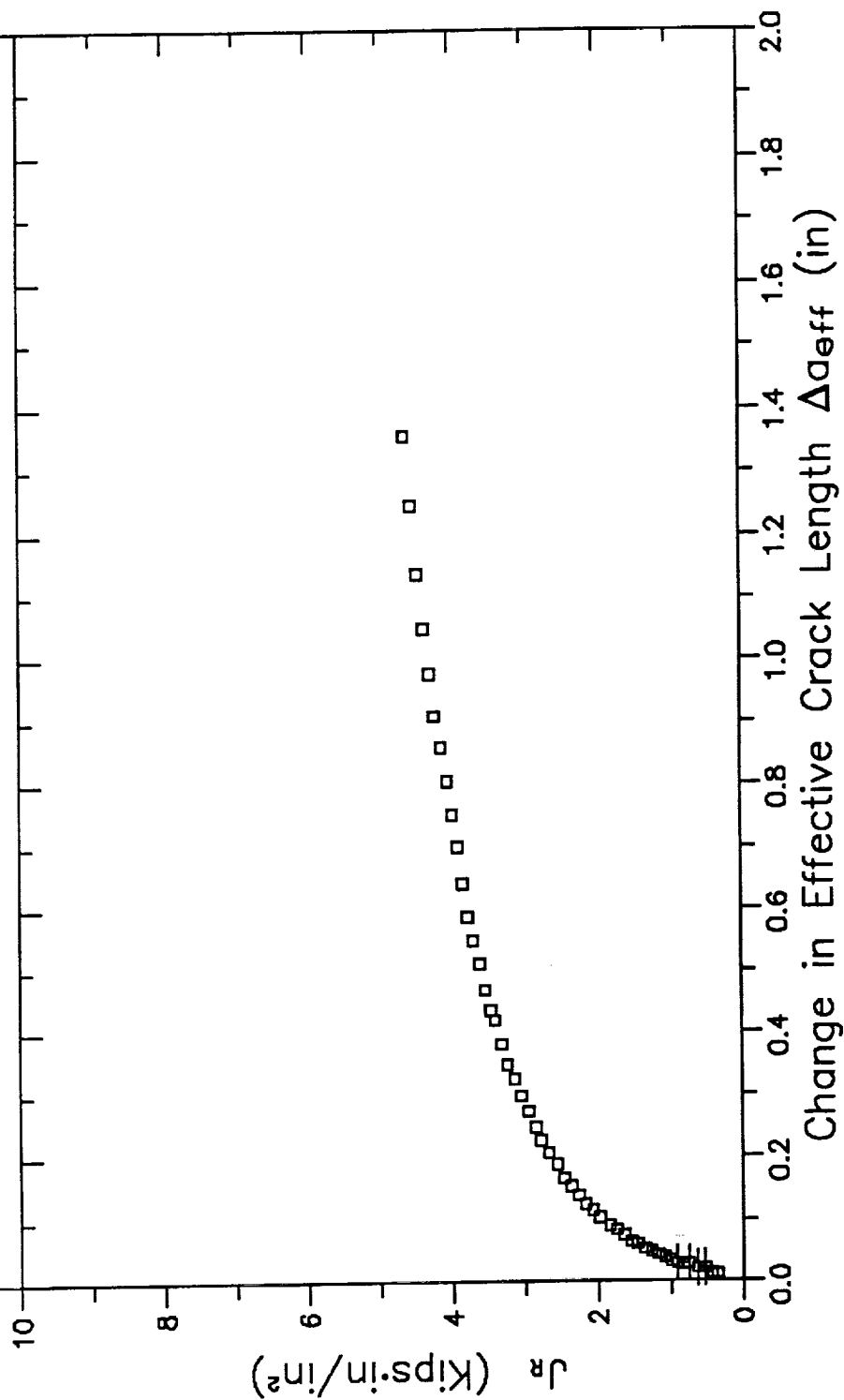


# RESISTANCE CURVE

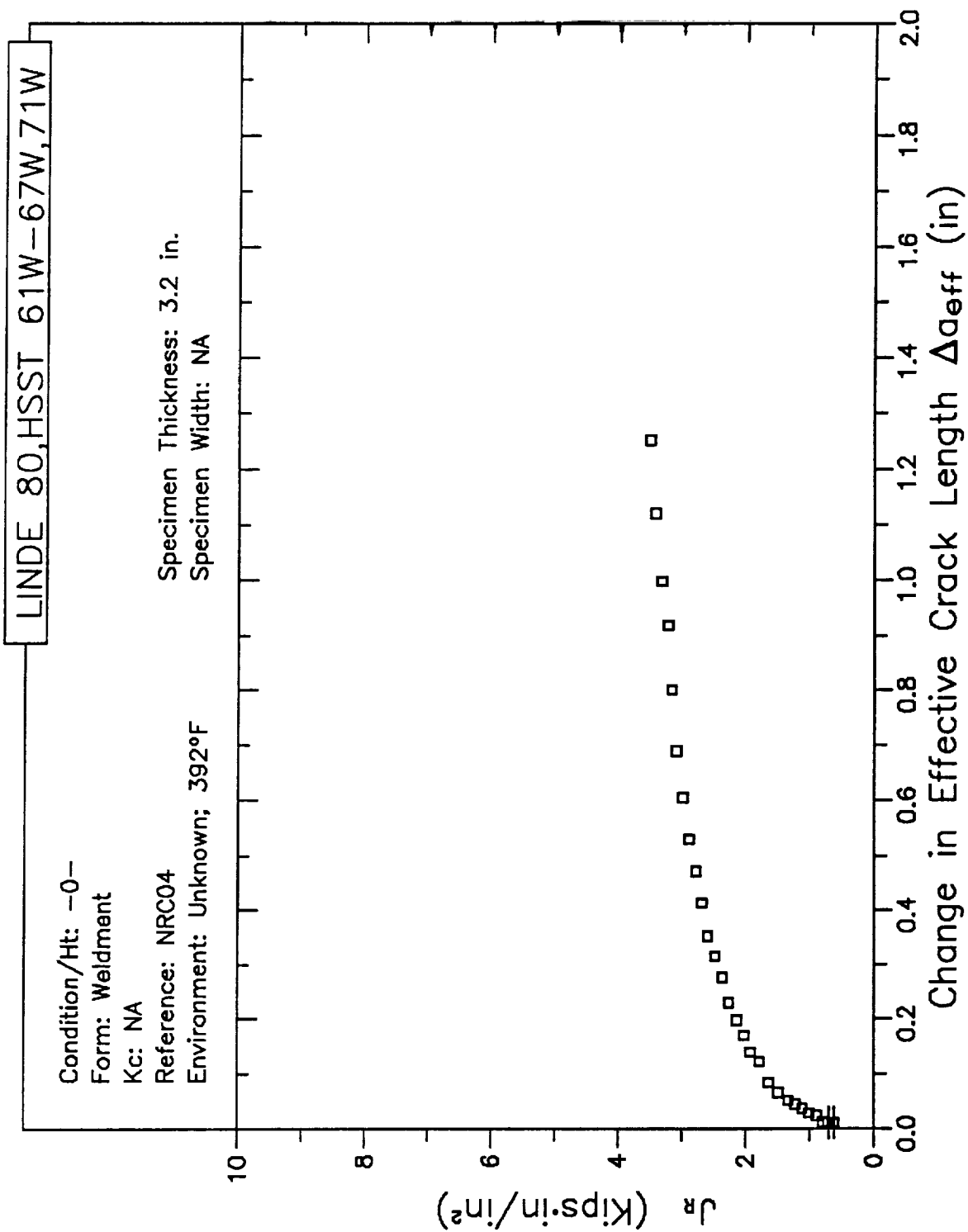
LINDE 80,HSST 61W-67W,71W

Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 392°F

Specimen Thickness: 3.2 in.  
Specimen Width: NA



# RESISTANCE CURVE

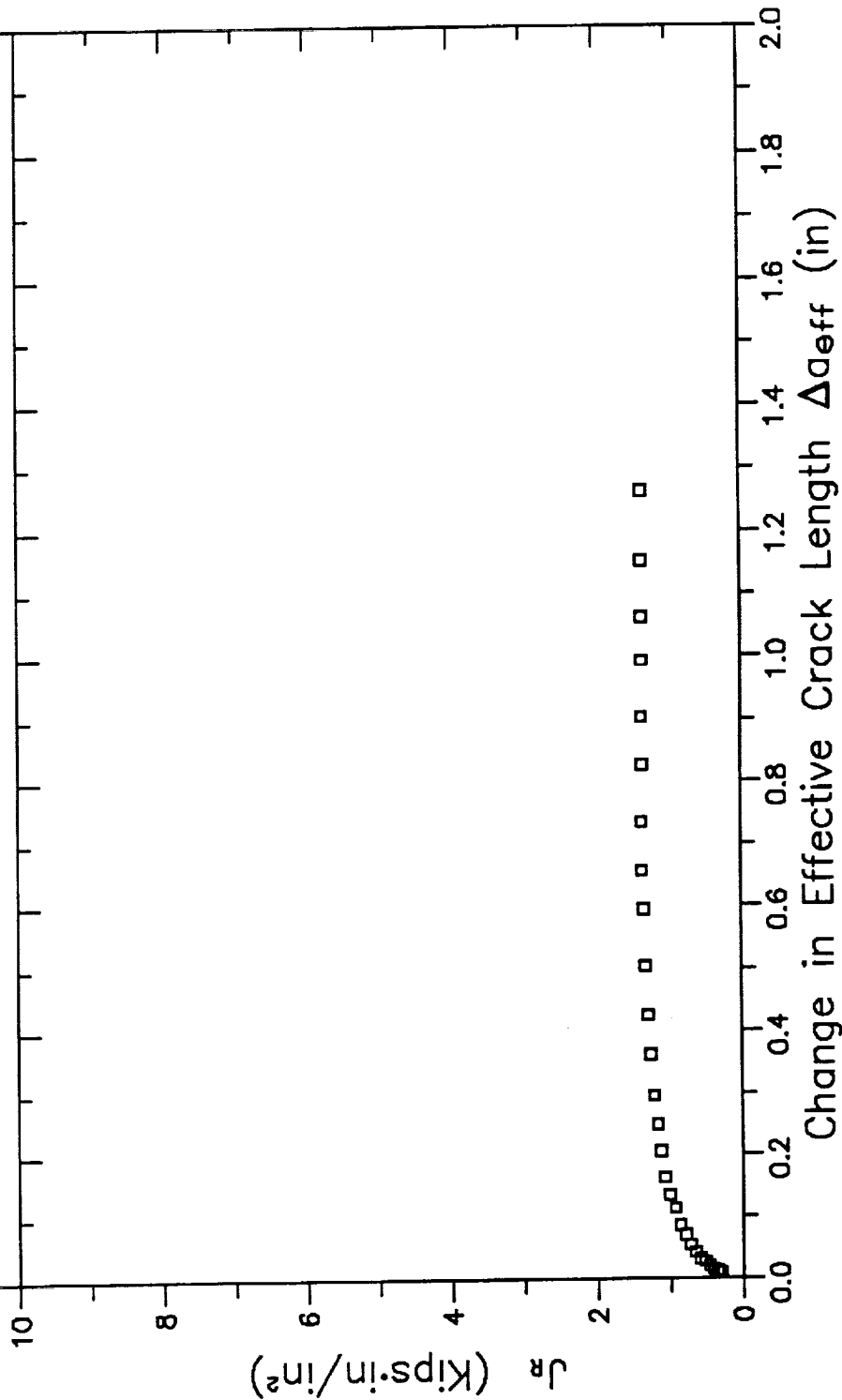


# RESISTANCE CURVE

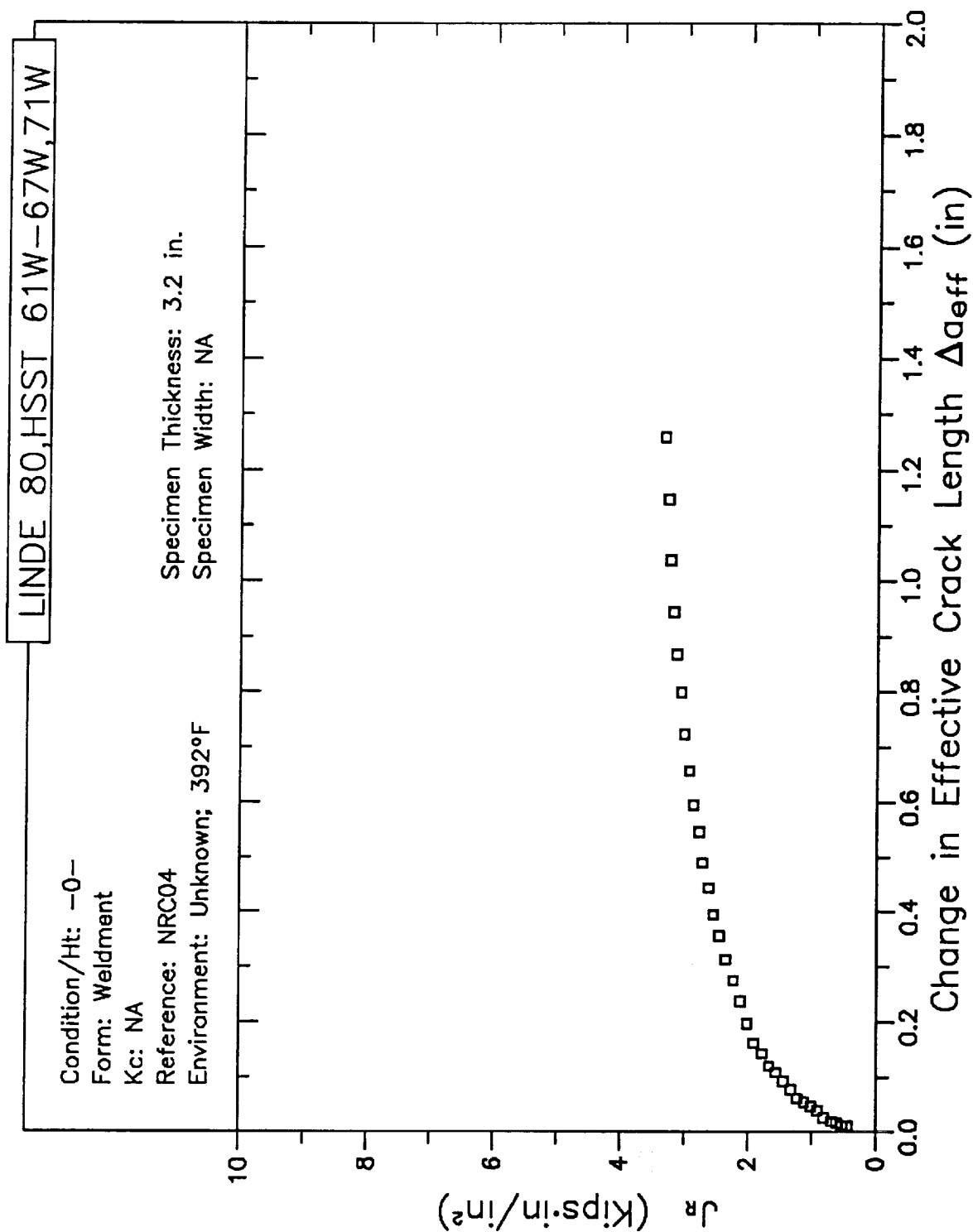
LINDE 80,HSST 61W-67W,71W

Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 392°F

Specimen Thickness: 3.2 in.  
Specimen Width: NA



# RESISTANCE CURVE

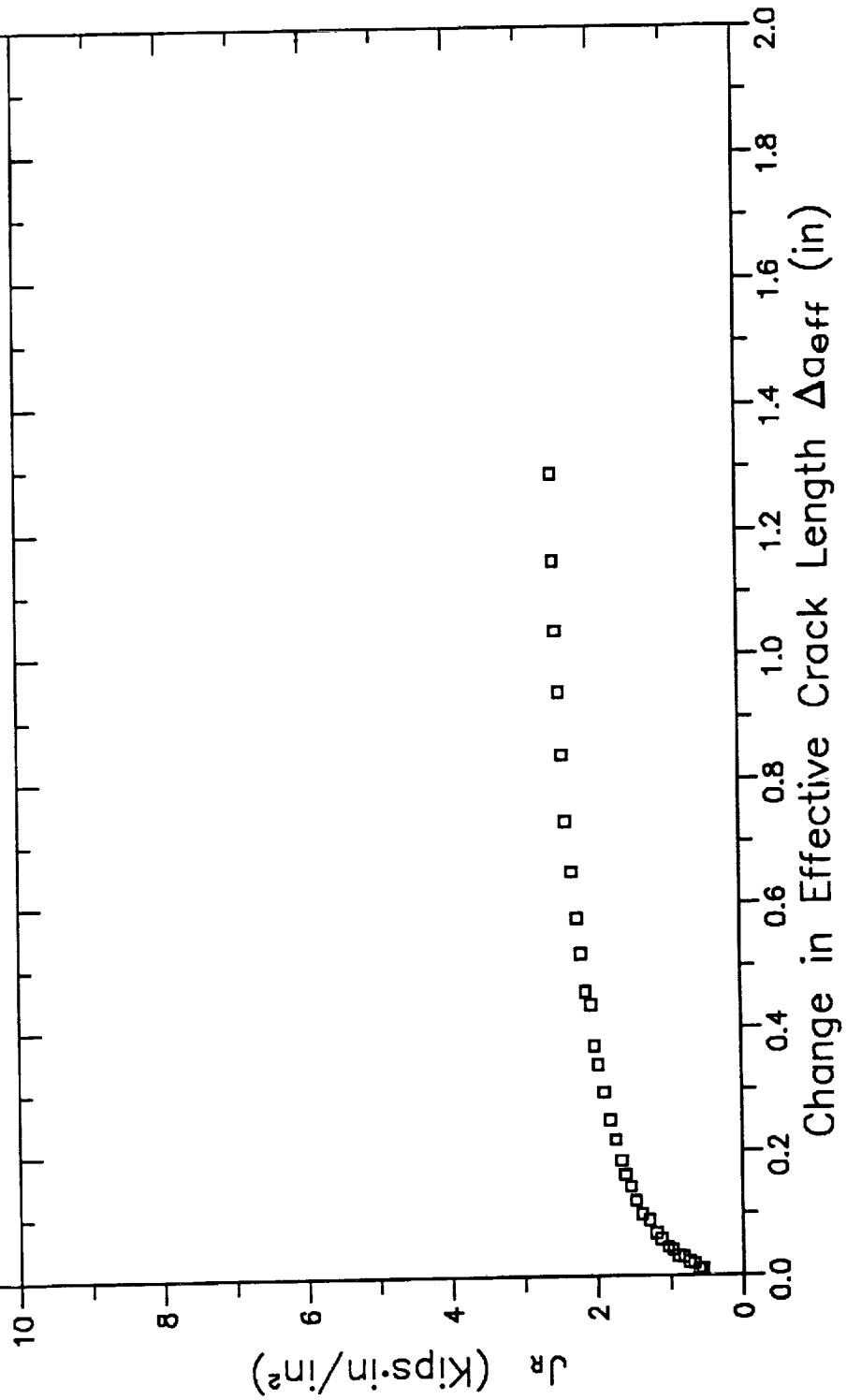


# RESISTANCE CURVE

LINDE 80,HSST 61W-67W,71W

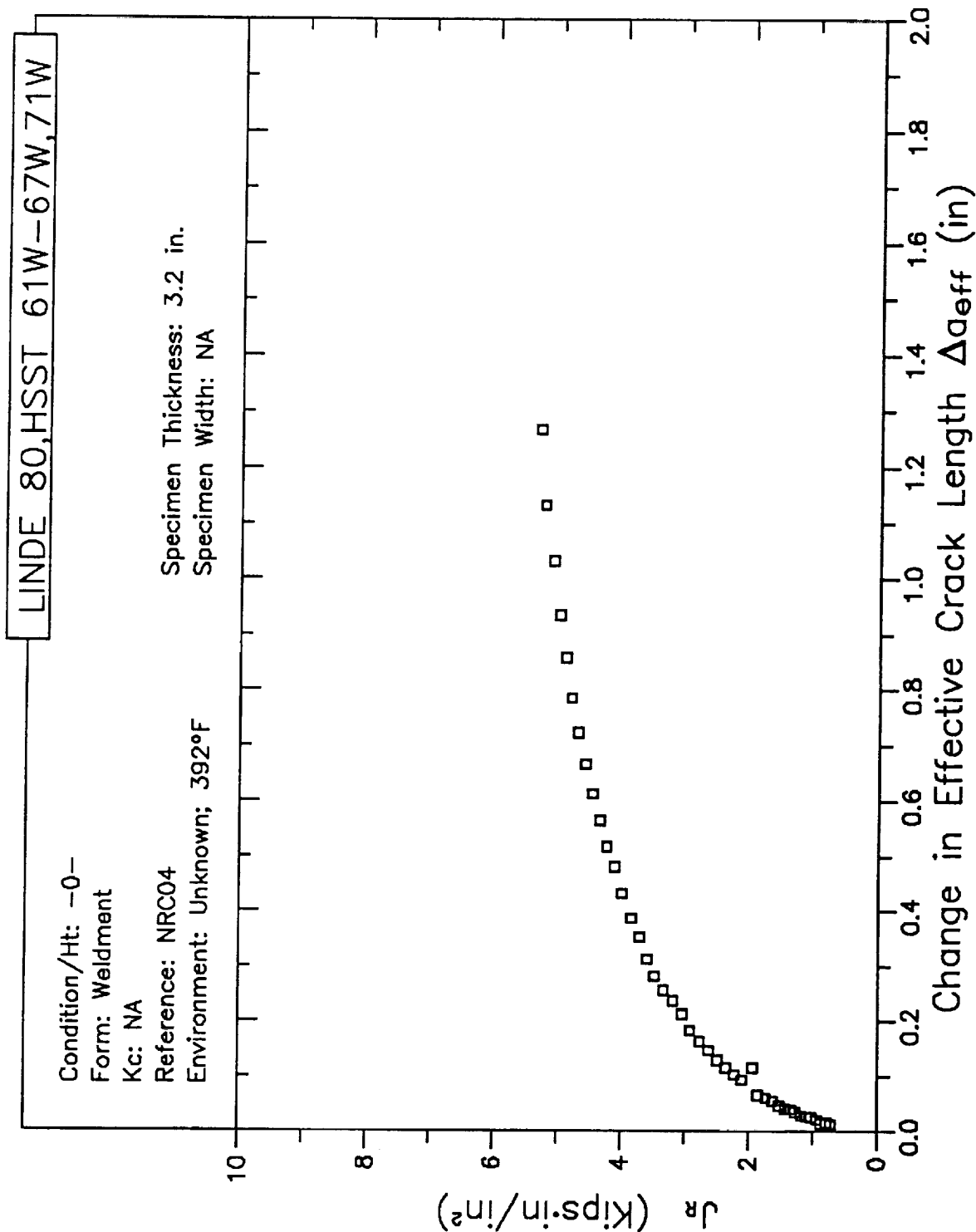
Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 392°F

Specimen Thickness: 3.2 in.  
Specimen Width: NA



B3-390

# RESISTANCE CURVE

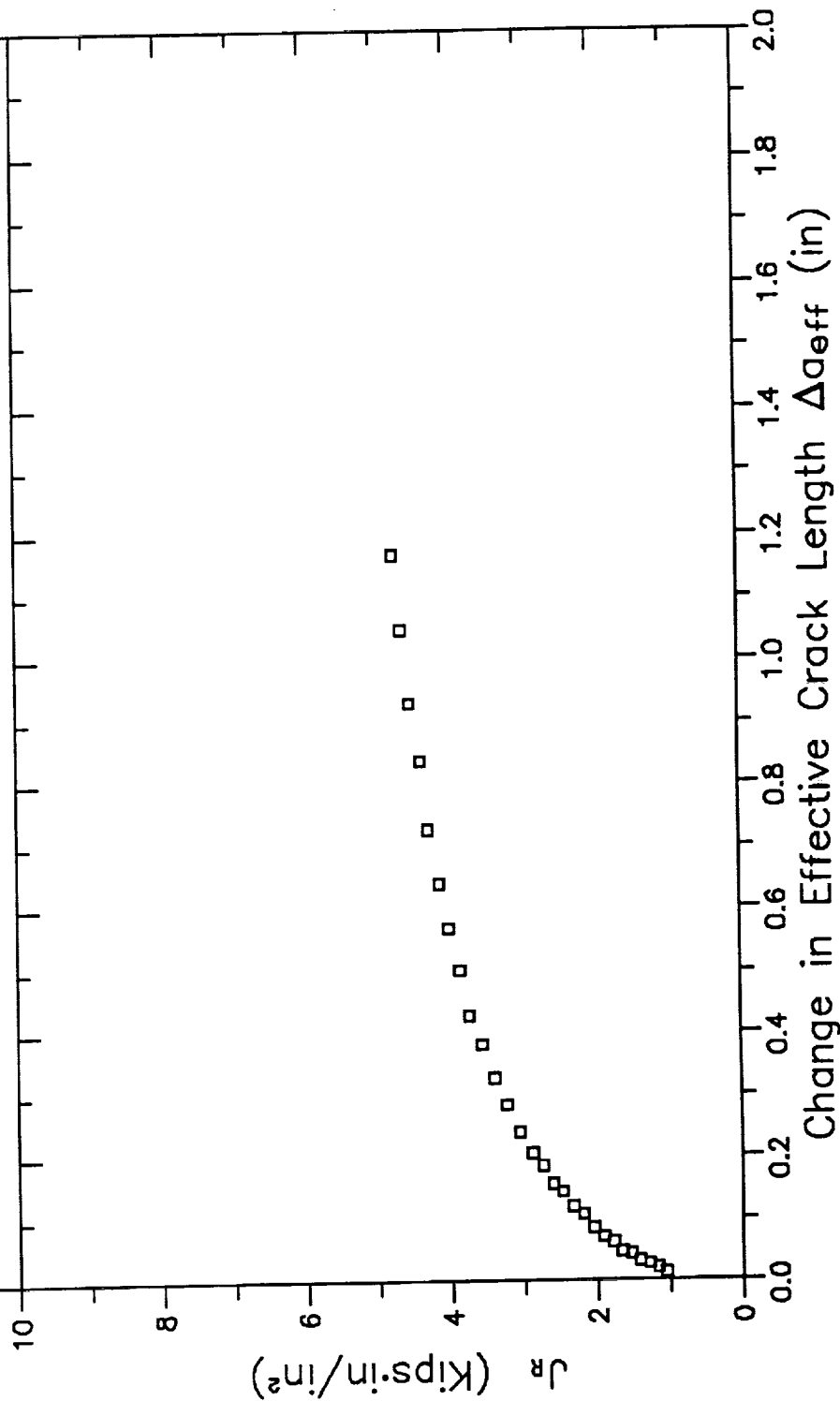


# RESISTANCE CURVE

LINDE 80,HSST 61W-67W,71W

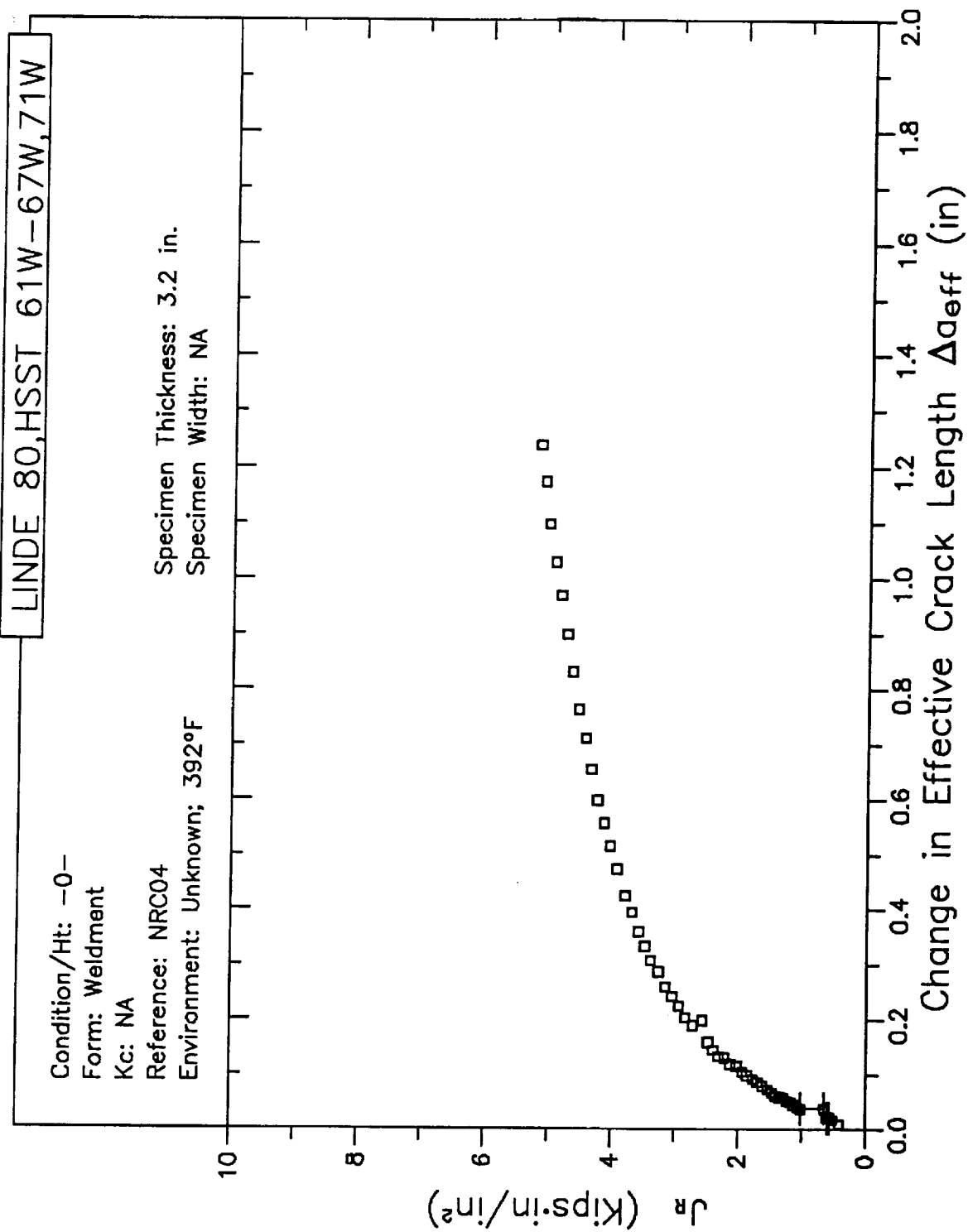
Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 392°F

Specimen Thickness: 3.2 in.  
Specimen Width: NA

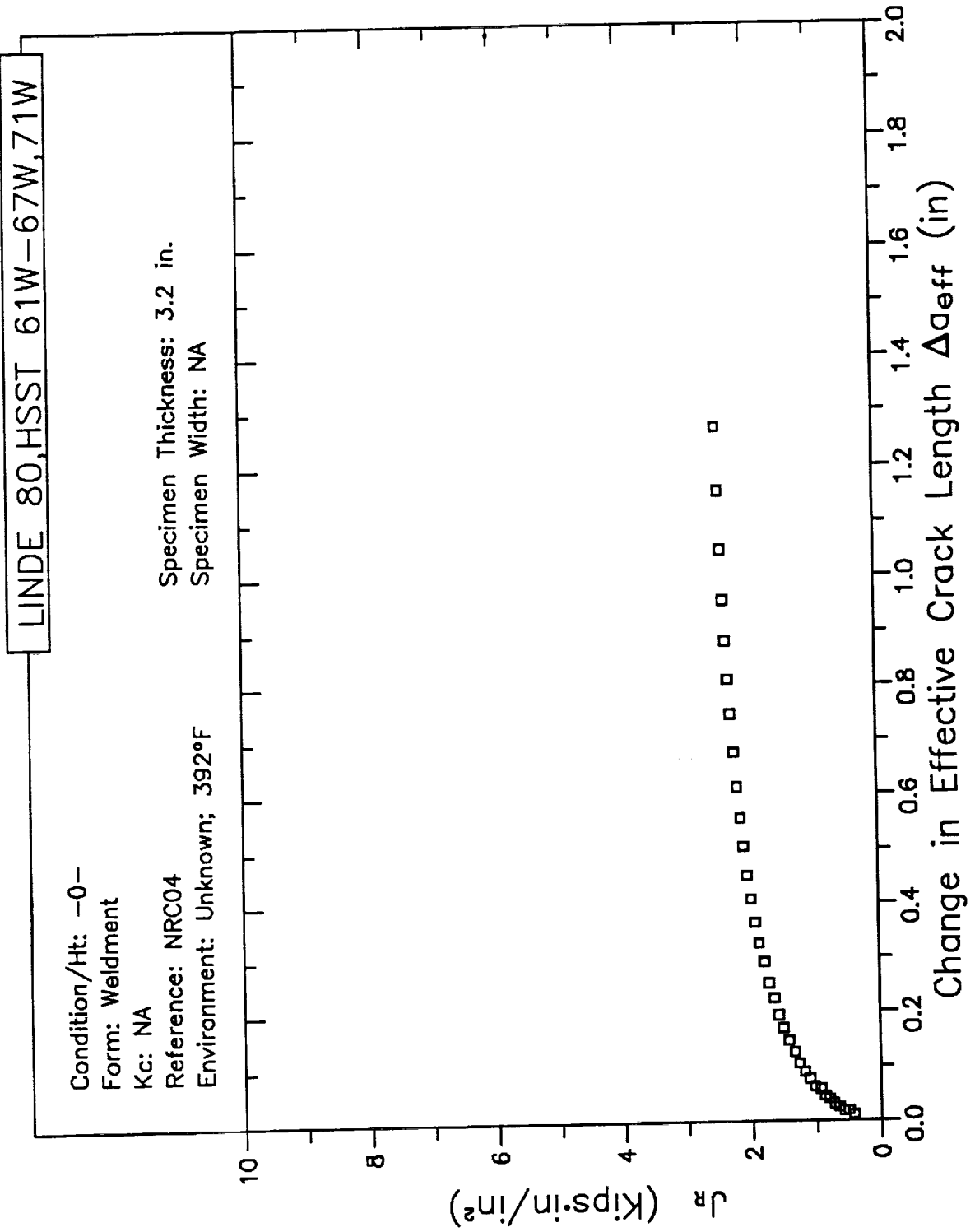




# RESISTANCE CURVE

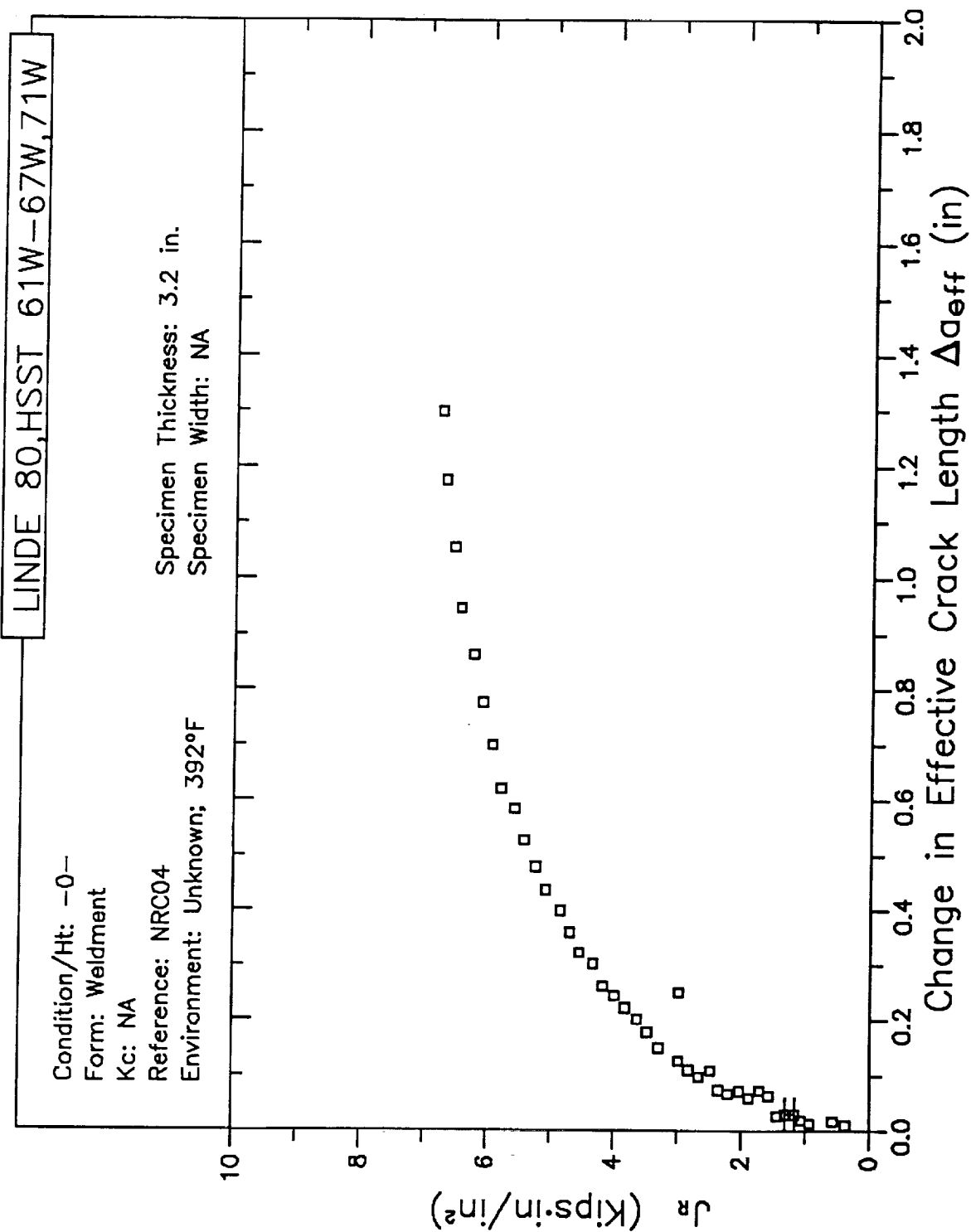


# RESISTANCE CURVE



B3-394

# RESISTANCE CURVE

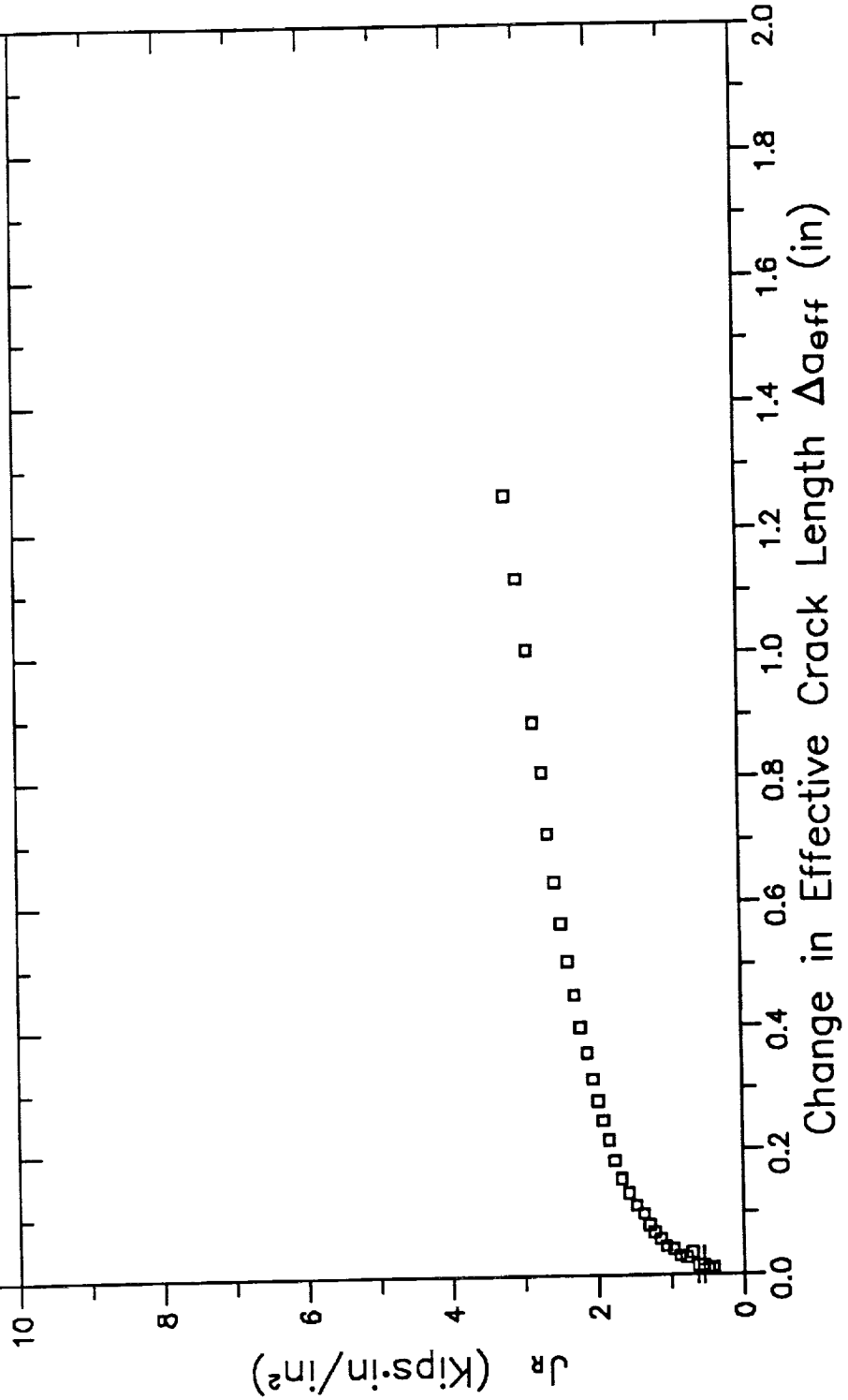


# RESISTANCE CURVE

LINDE 80,HSST 61W-67W,71W

Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 392°F

Specimen Thickness: 3.2 in.  
Specimen Width: NA

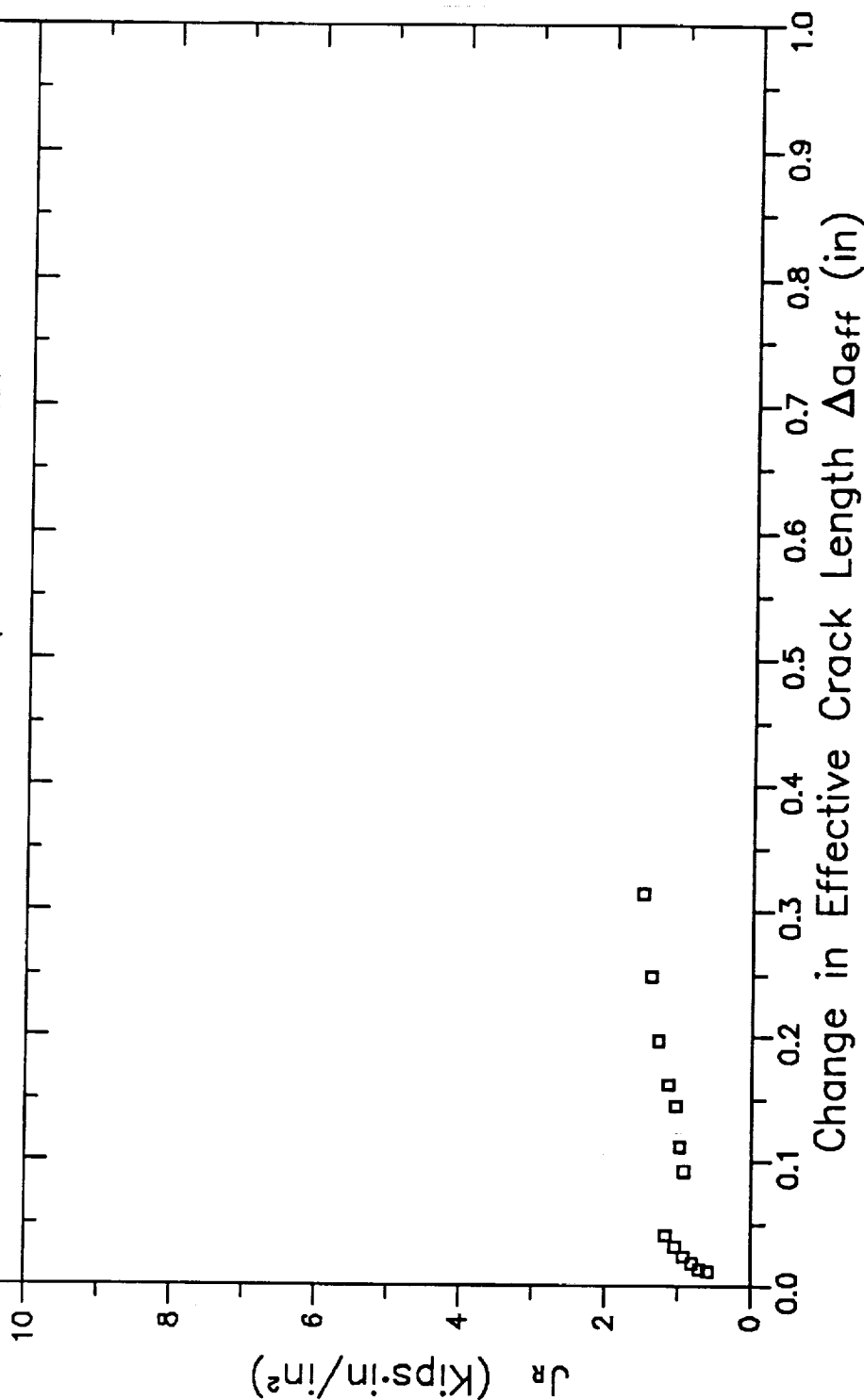


# RESISTANCE CURVE

LINDE 80,HSST 61W-67W,71W

Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 399.2°F

Specimen Thickness: 0.8 in.  
Specimen Width: NA

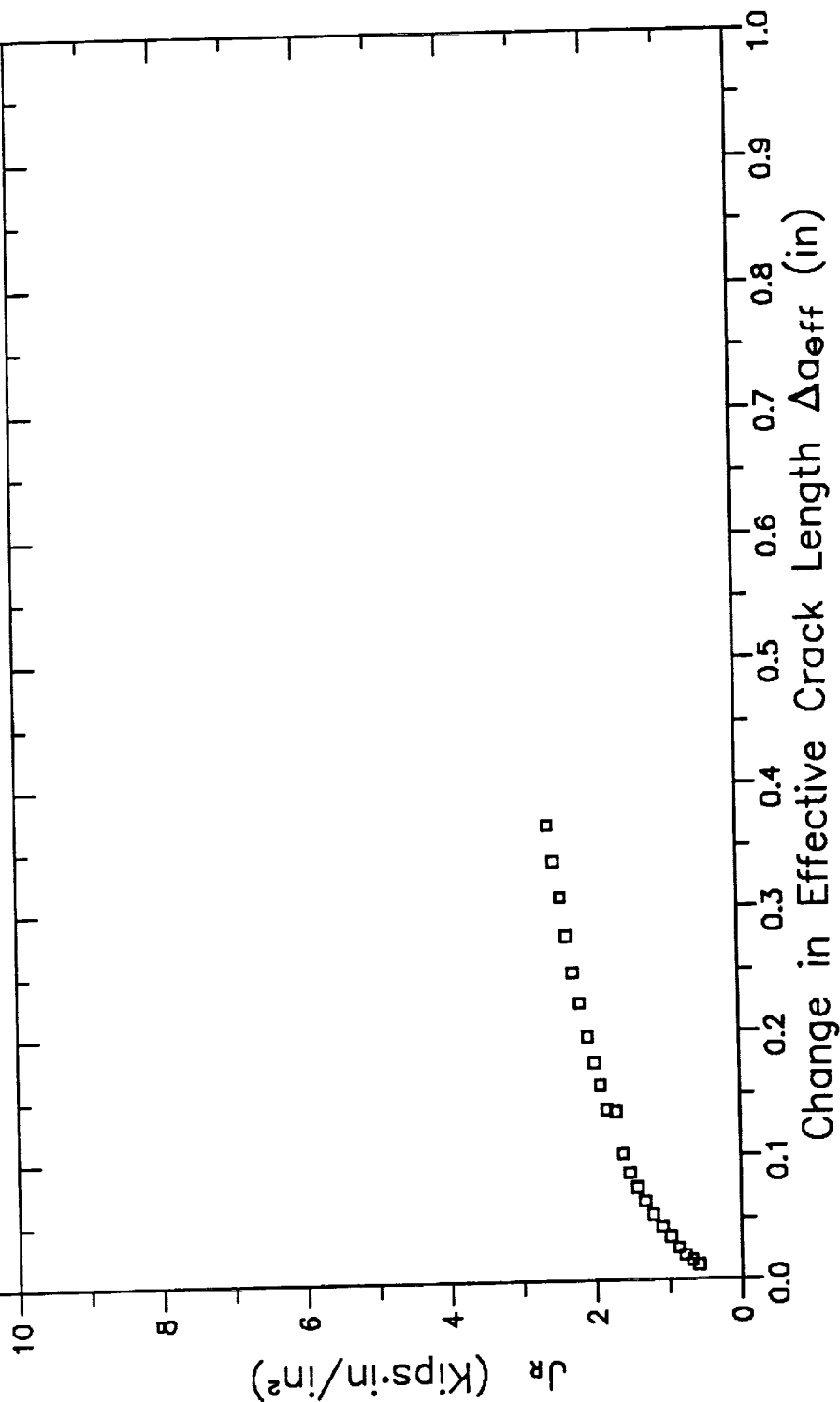


# RESISTANCE CURVE

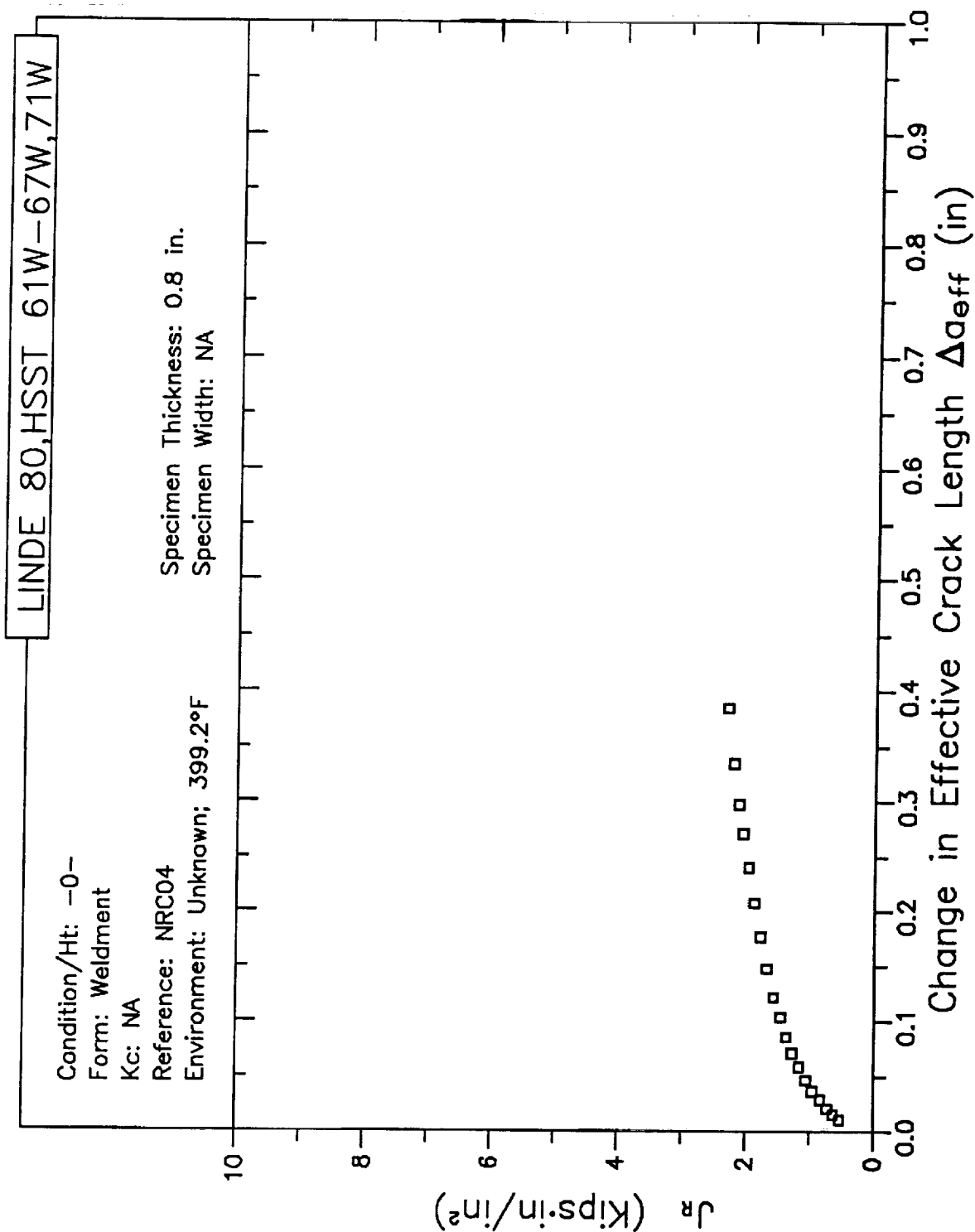
LINDE 80, HSST 61W-67W, 71W

Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 399.2°F

Specimen Thickness: 0.8 in.  
Specimen Width: NA



# RESISTANCE CURVE

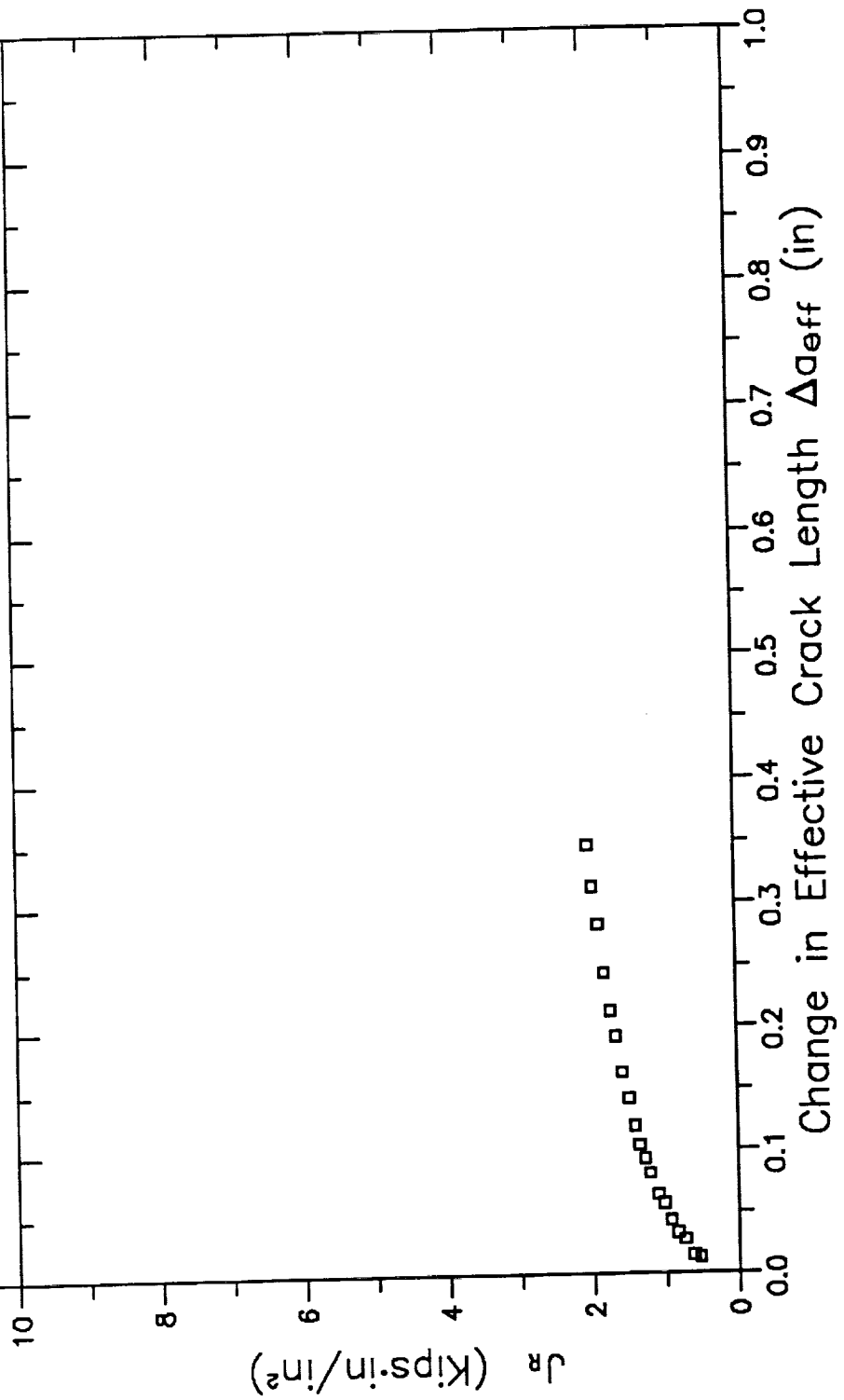


# RESISTANCE CURVE

LINDE 80,HSST 61W-67W,71W

Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 399.2°F

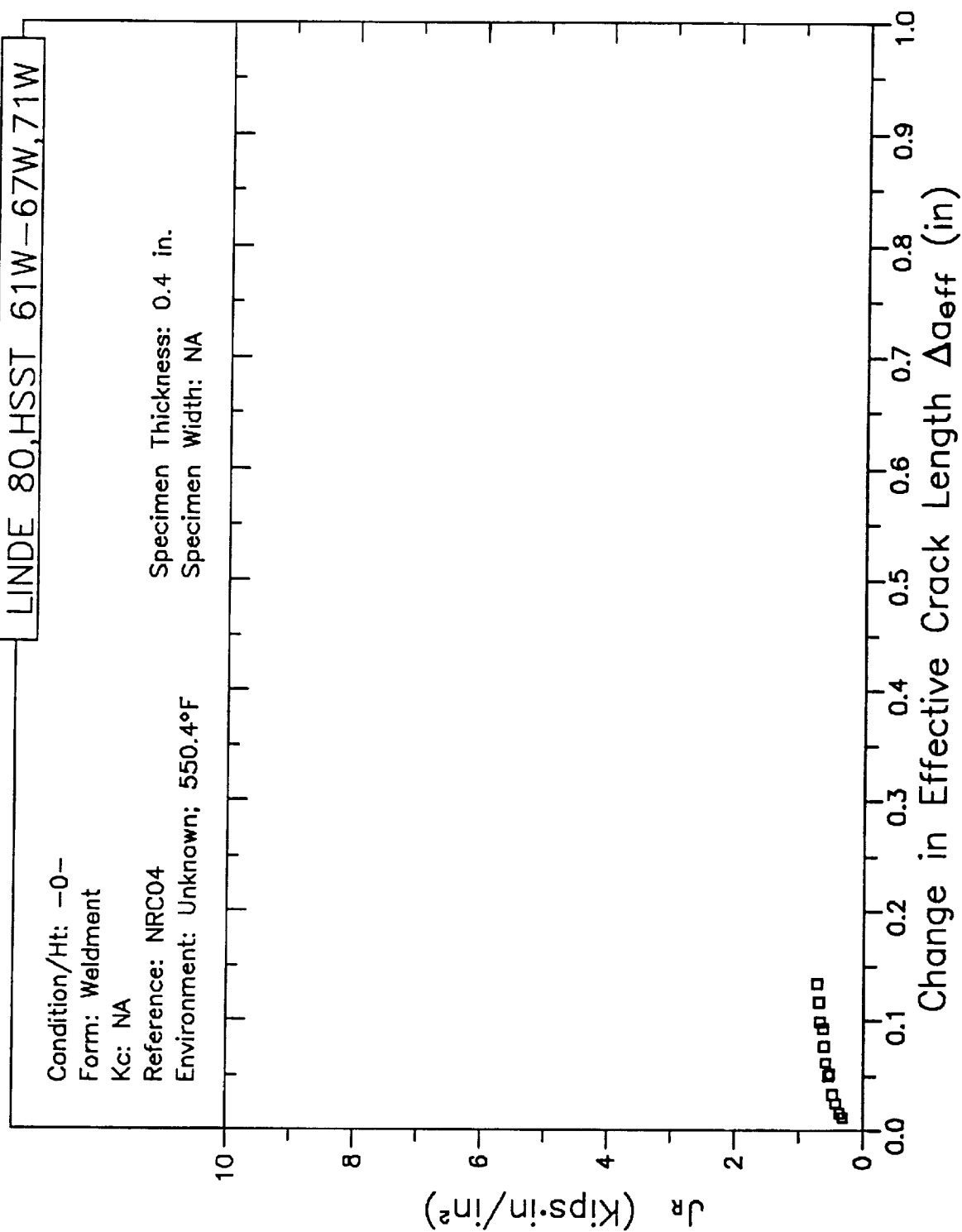
Specimen Thickness: 0.8 in.  
Specimen Width: NA



B3-400



# RESISTANCE CURVE

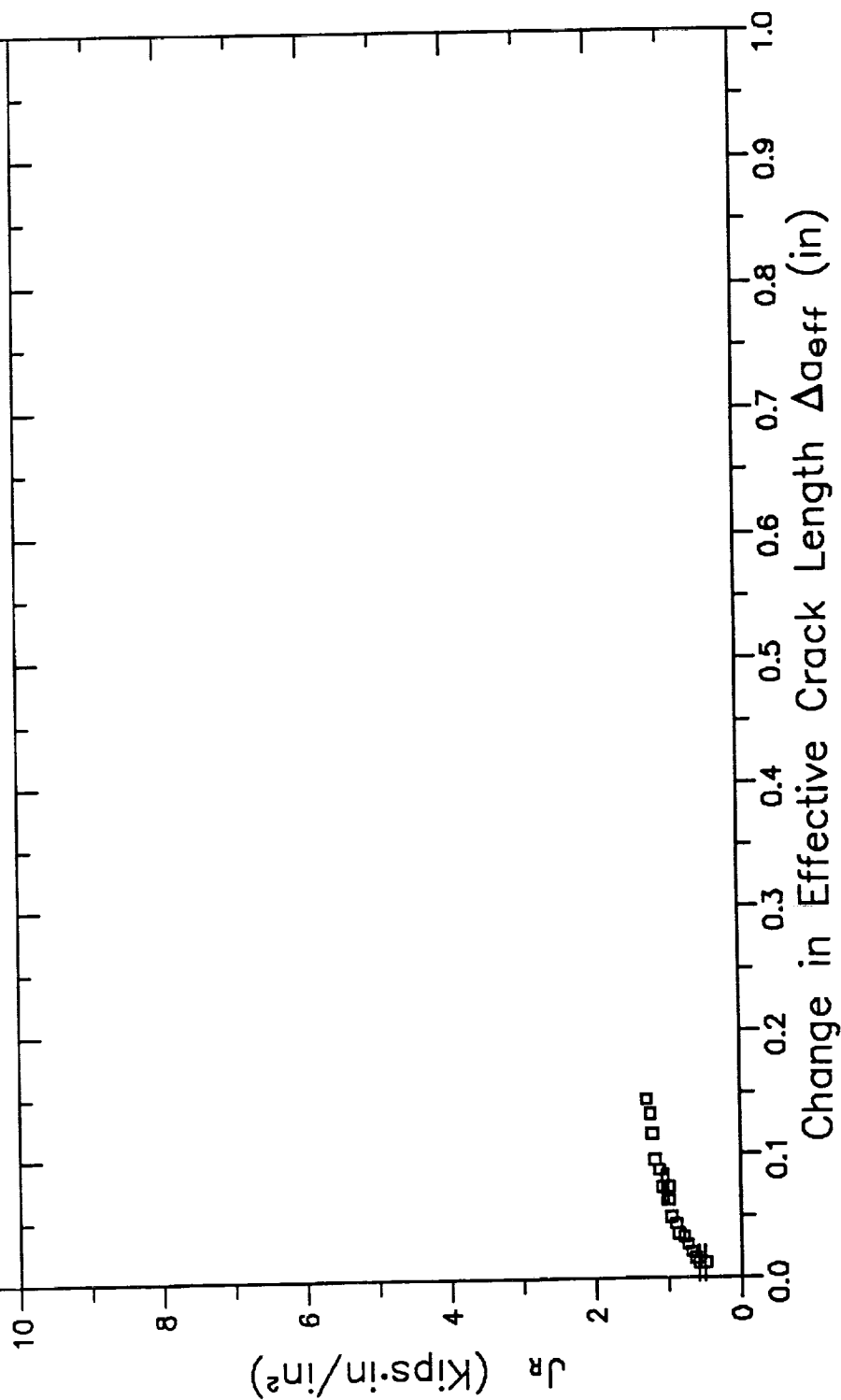


# RESISTANCE CURVE

LINDE 80,HSST 61W-67W,71W

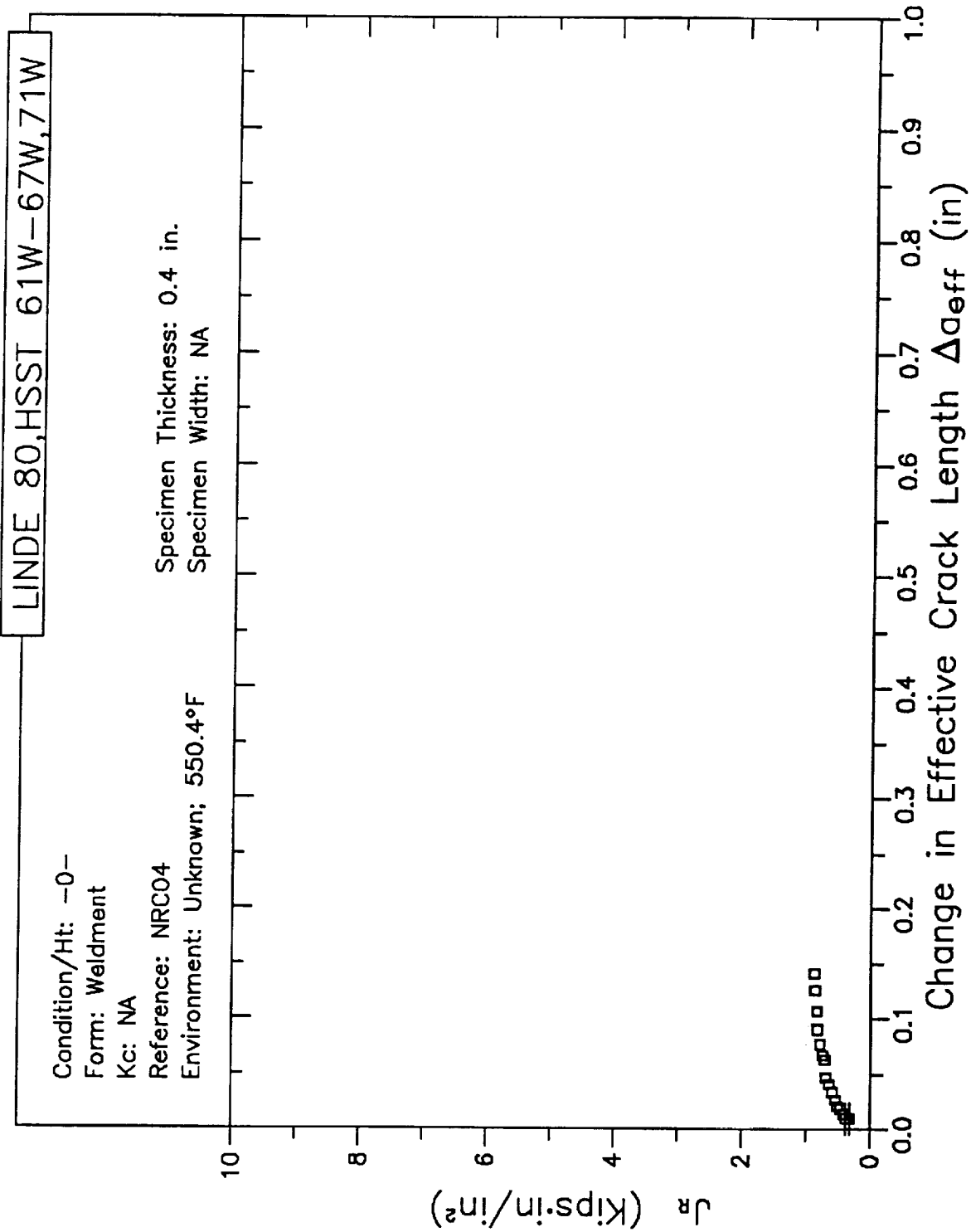
Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 550.4°F

Specimen Thickness: 0.4 in.  
Specimen Width: NA



B3-402

# RESISTANCE CURVE

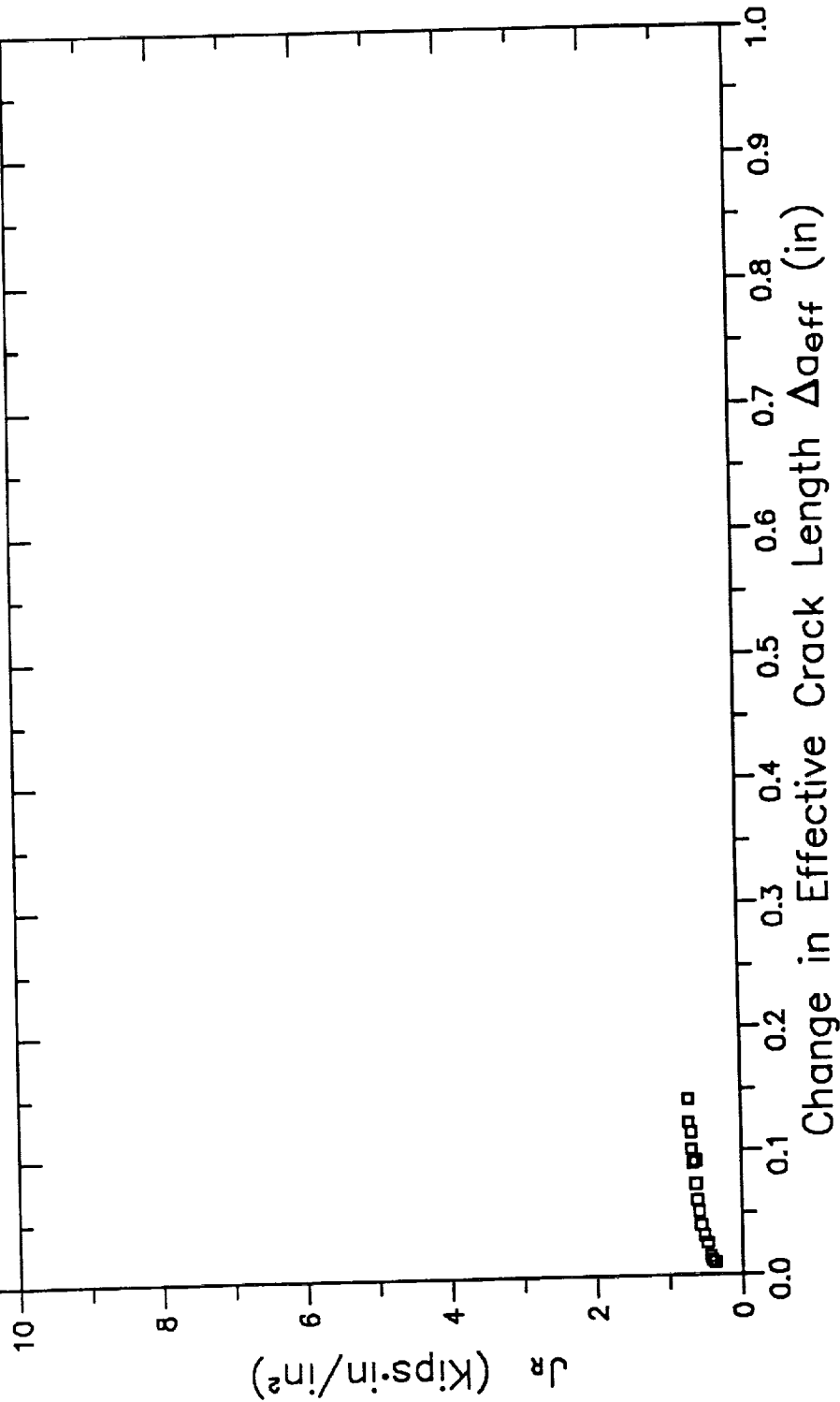


# RESISTANCE CURVE

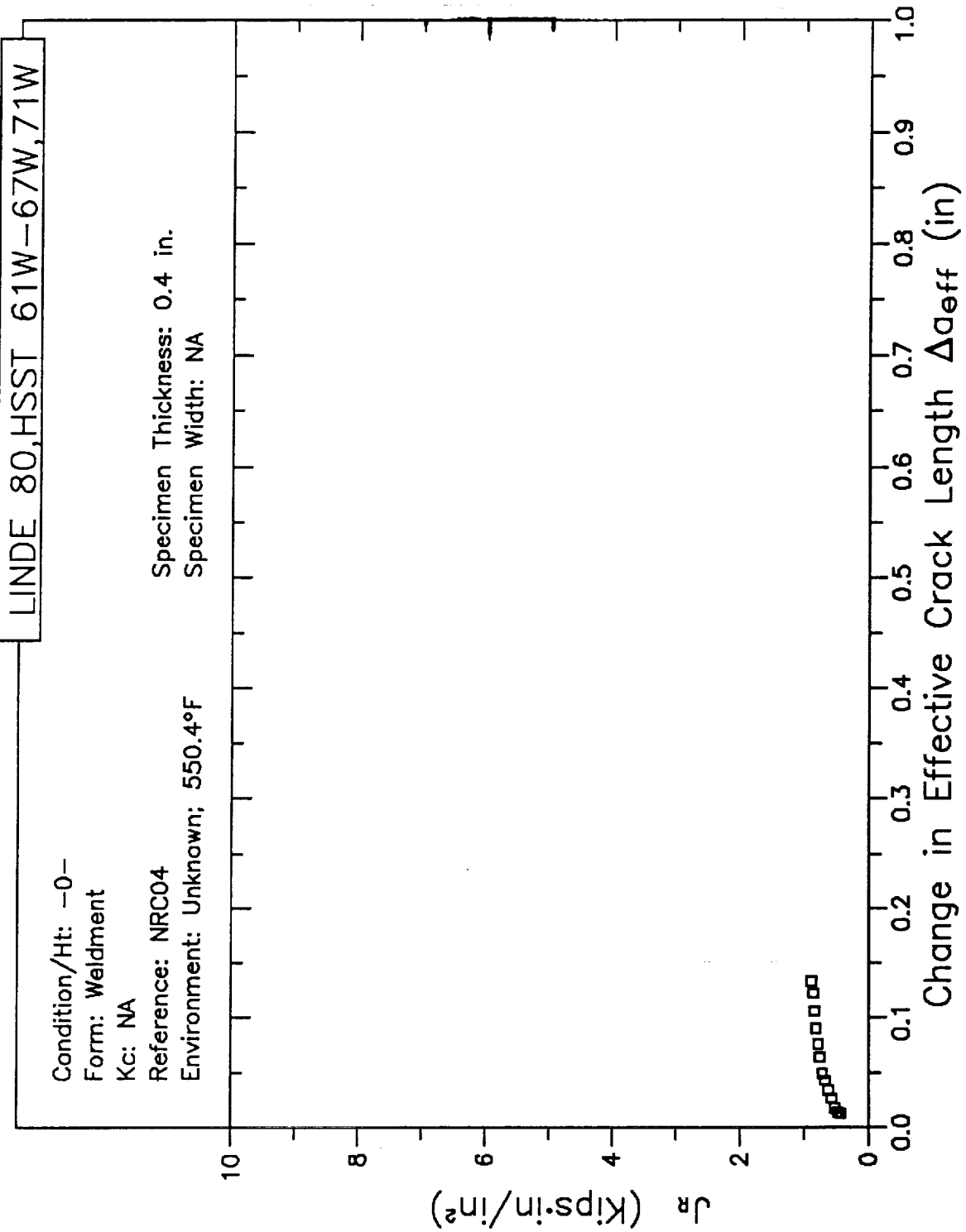
LINDE 80,HSST 61W-67W,71W

Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 550.4°F

Specimen Thickness: 0.4 in.  
Specimen Width: NA

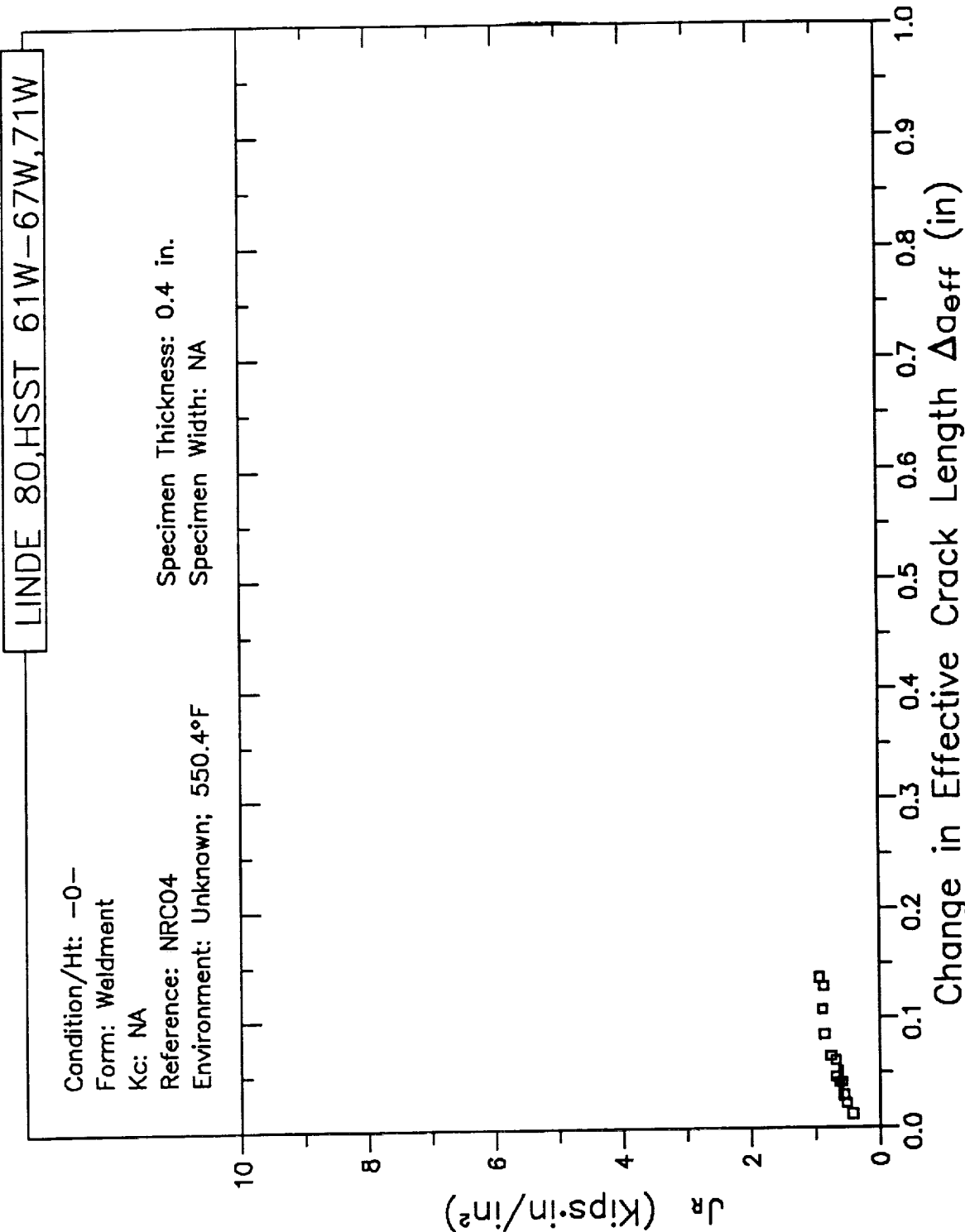


# RESISTANCE CURVE

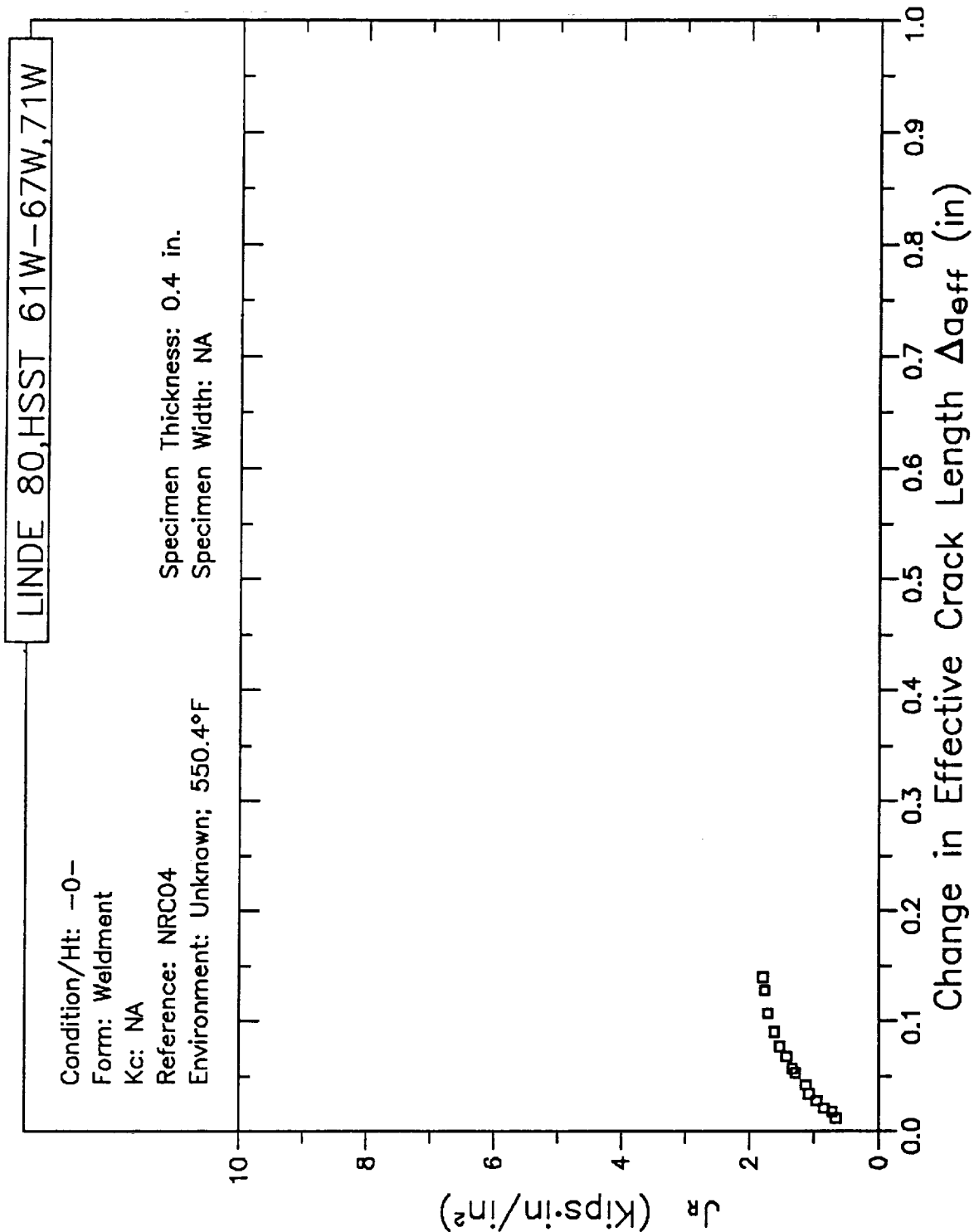


B3-405

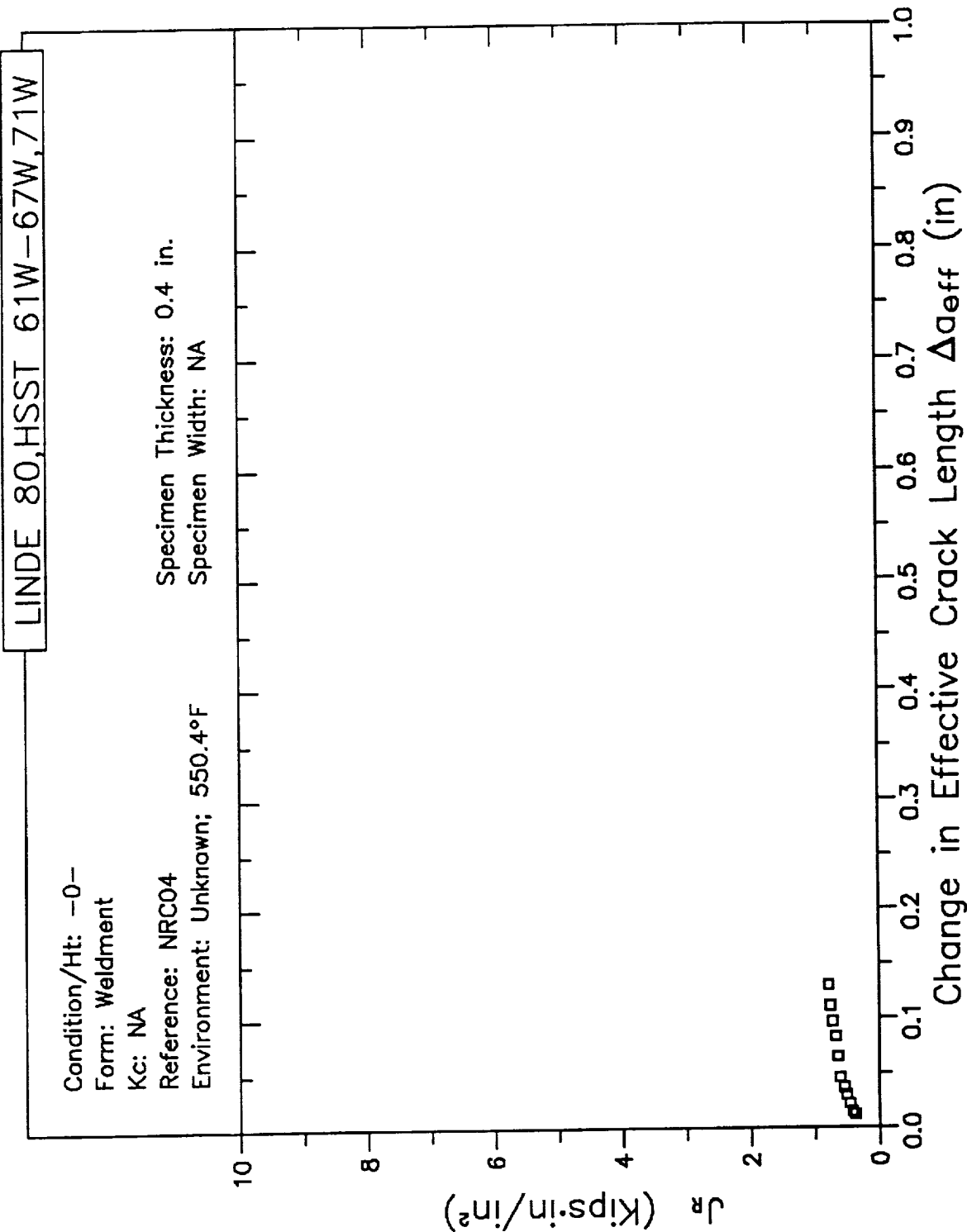
# RESISTANCE CURVE



# RESISTANCE CURVE



# RESISTANCE CURVE



B3-408

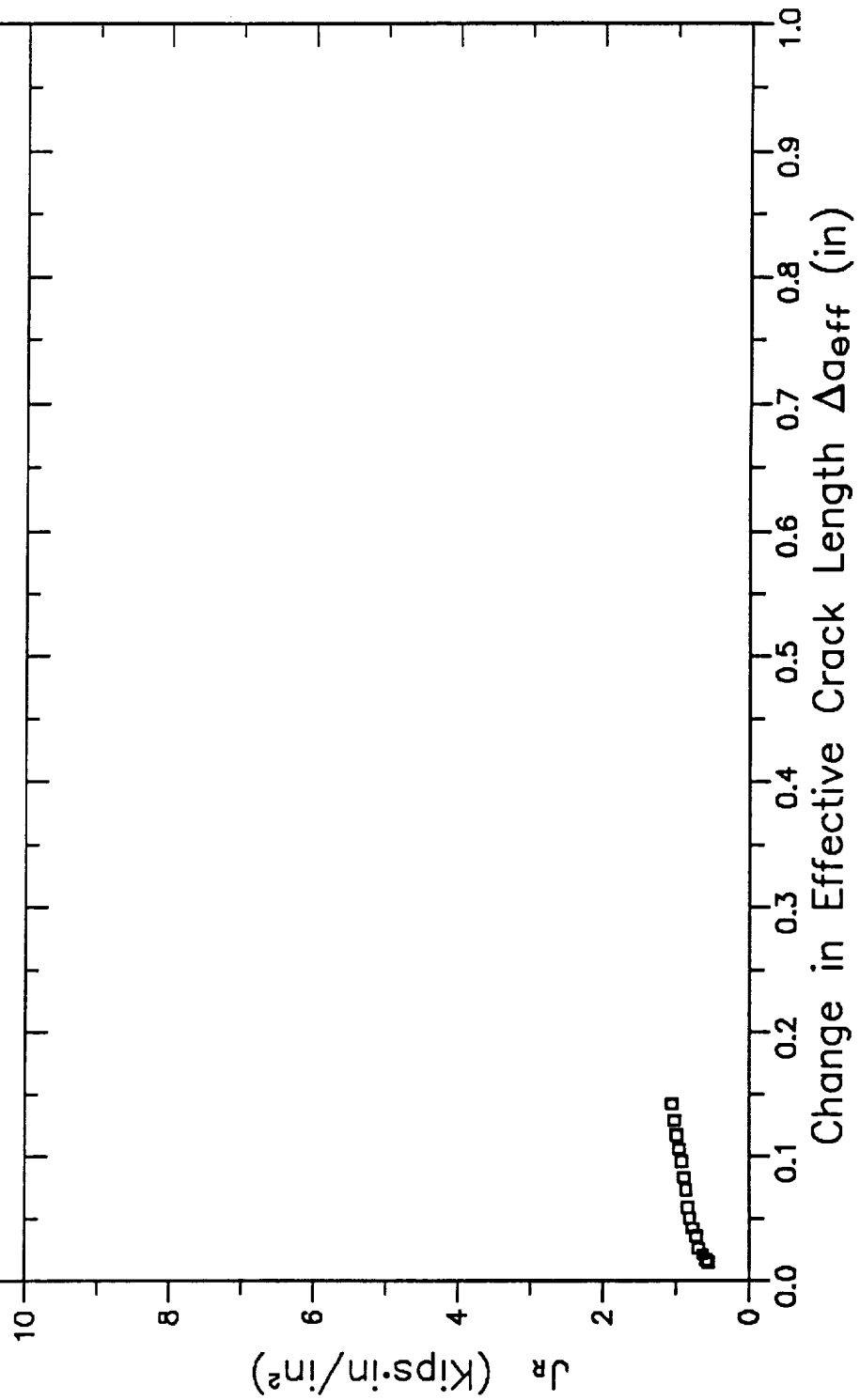


# RESISTANCE CURVE

LINDE 80,HSST 61W-67W,71W

Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 550.4°F

Specimen Thickness: 0.4 in.  
Specimen Width: NA

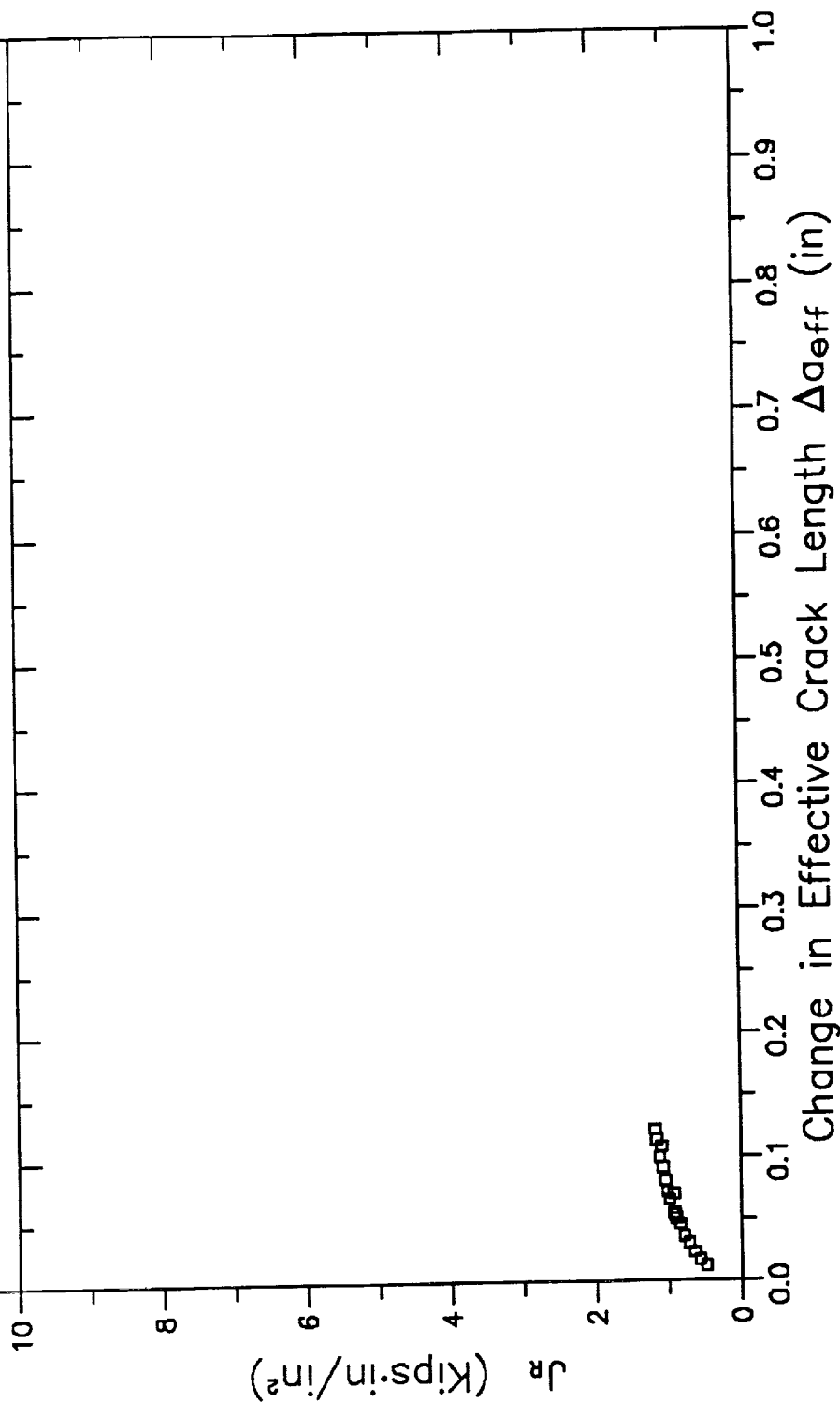


# RESISTANCE CURVE

LINDE 80,HSST 61W-67W,71W

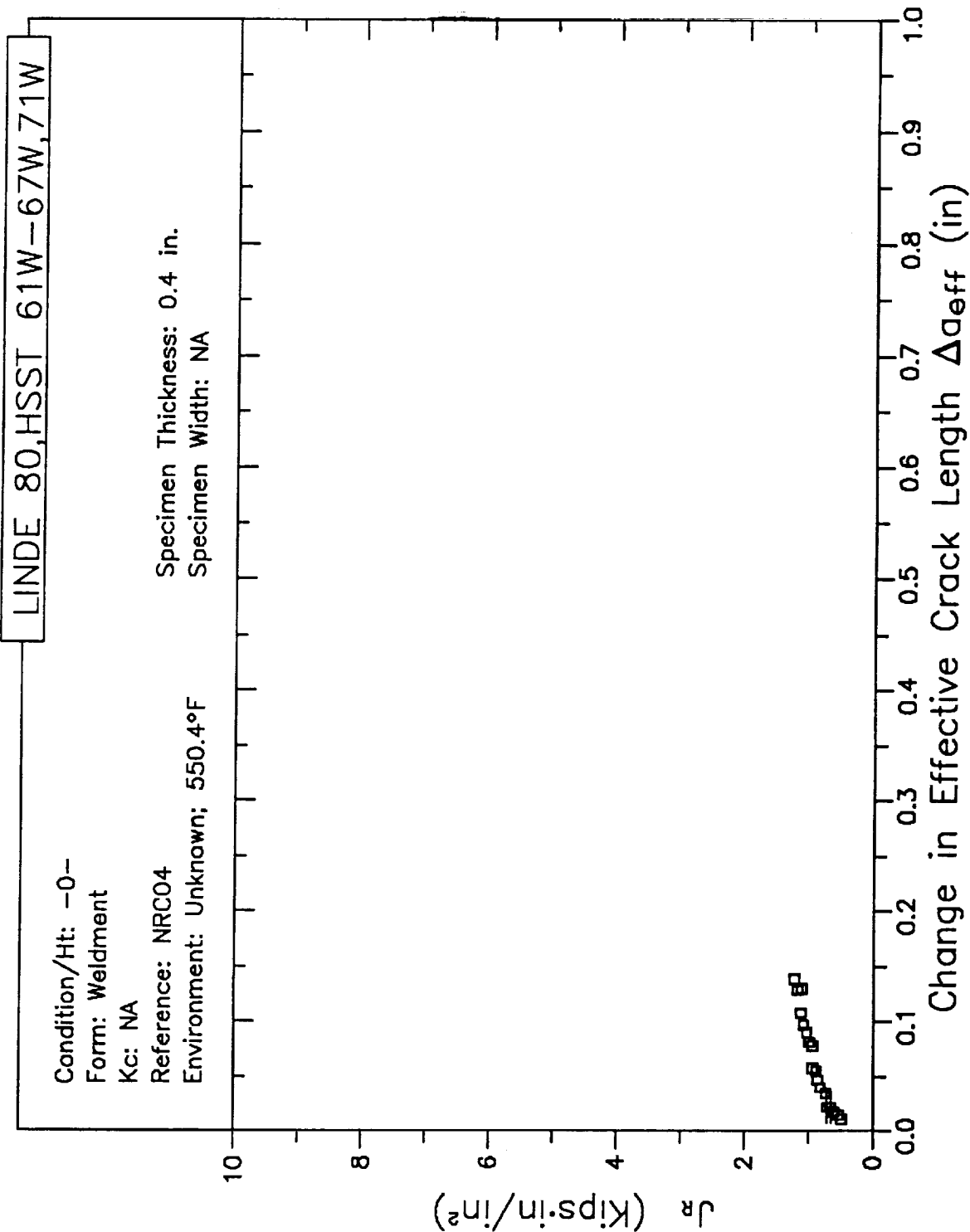
Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 550.4°F

Specimen Thickness: 0.4 in.  
Specimen Width: NA

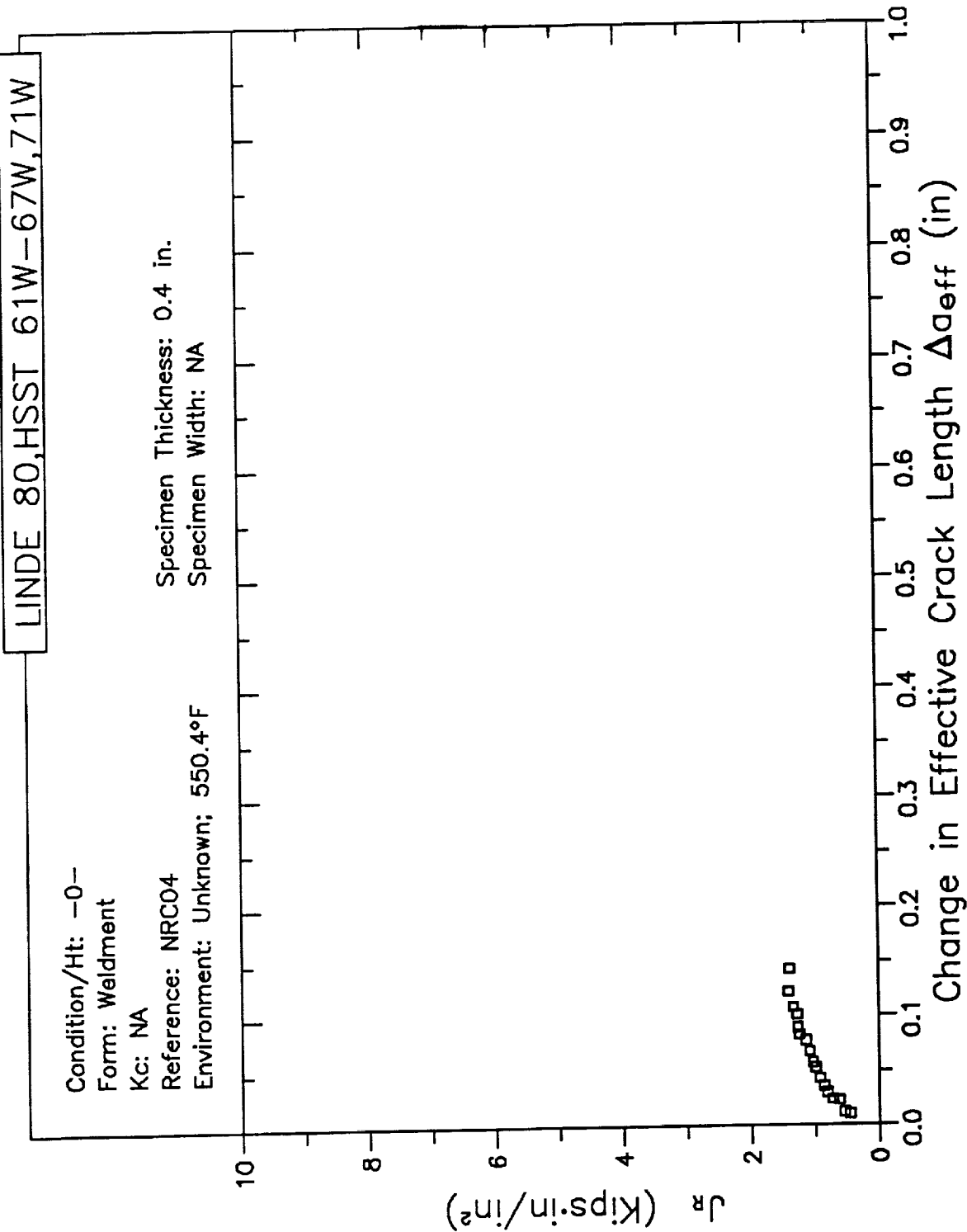


B3-410

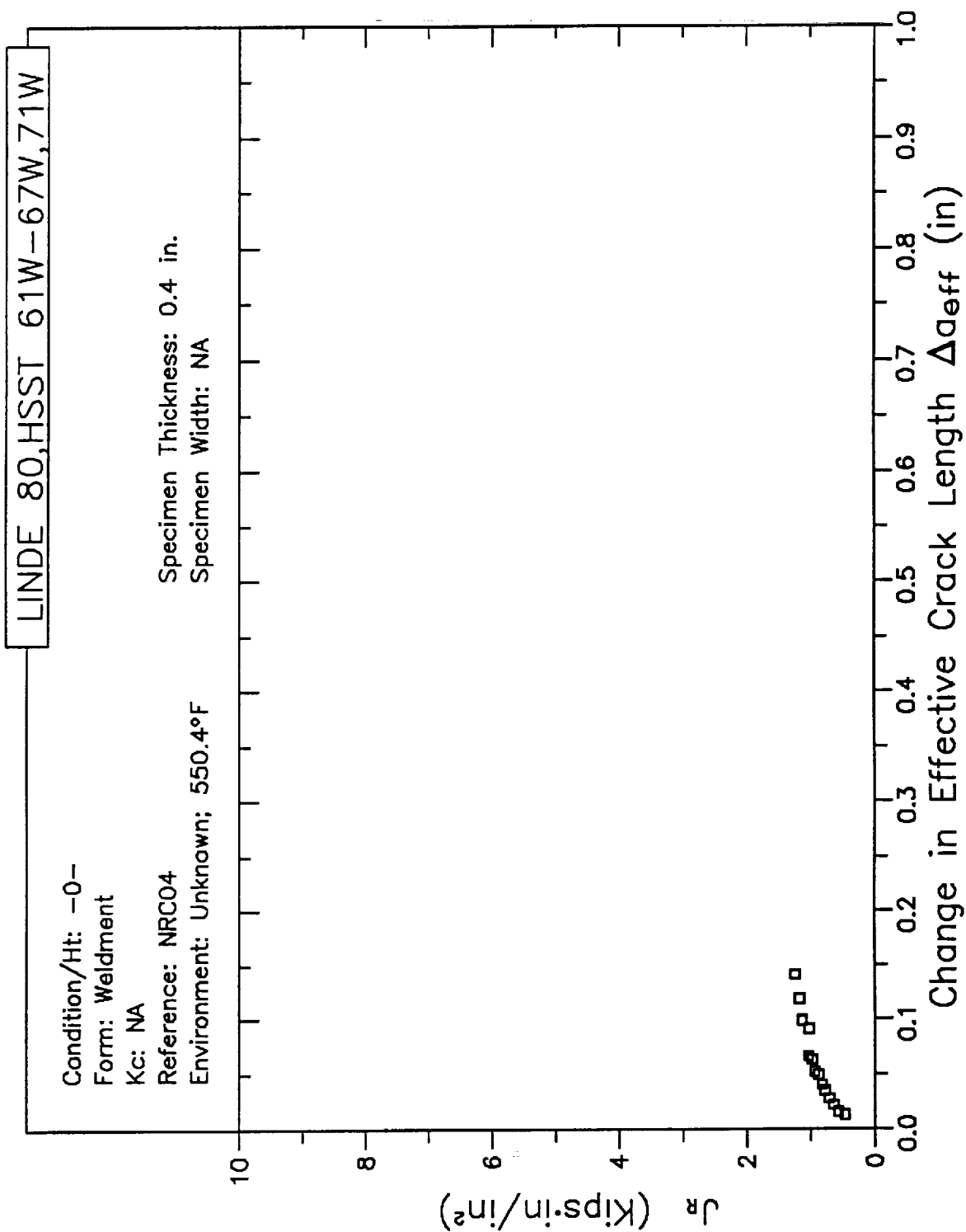
# RESISTANCE CURVE



# RESISTANCE CURVE



# RESISTANCE CURVE

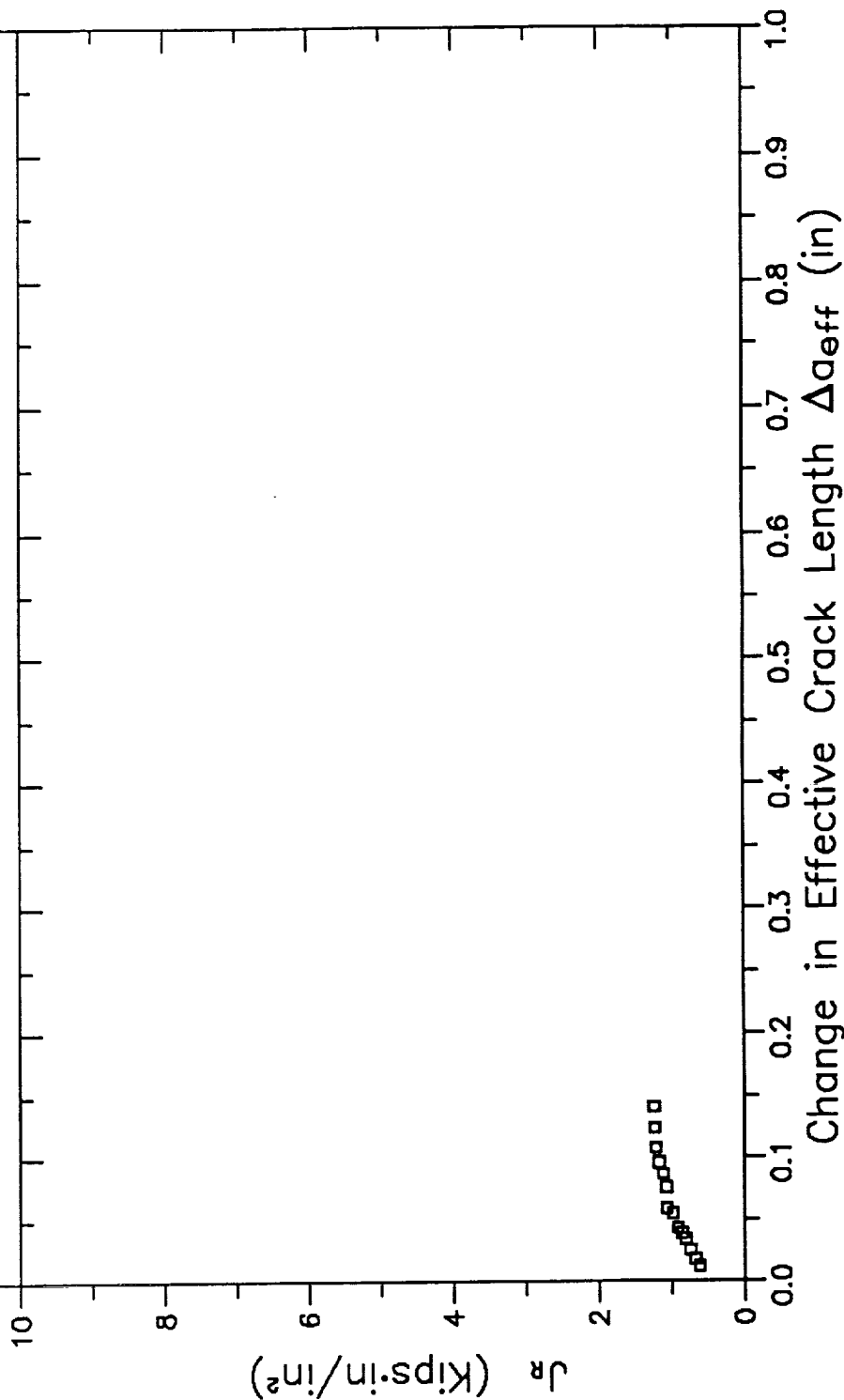


# RESISTANCE CURVE

LINDE 80,HSST 61W-67W,71W

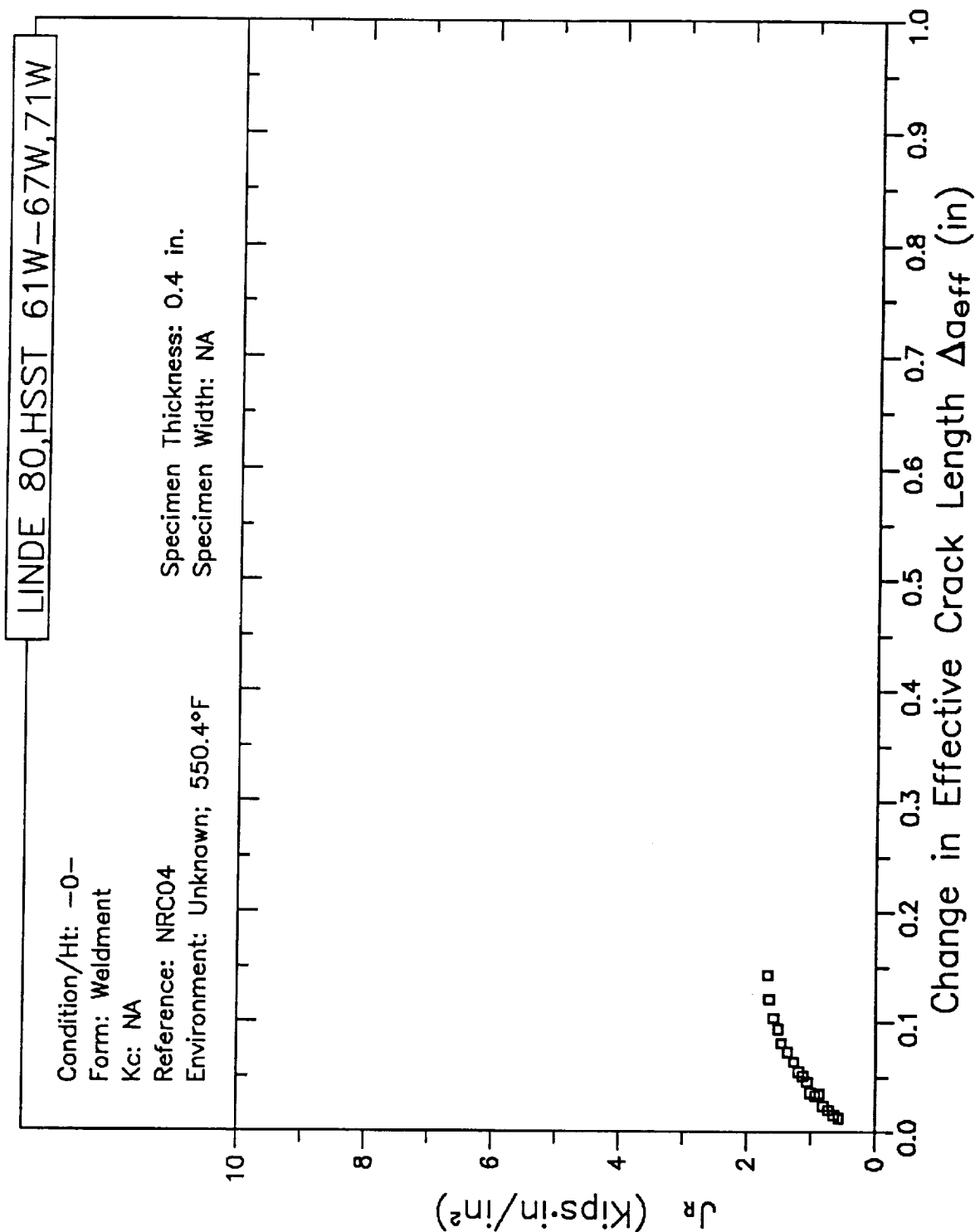
Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 550.4°F

Specimen Thickness: 0.4 in.  
Specimen Width: NA



B3-414

# RESISTANCE CURVE

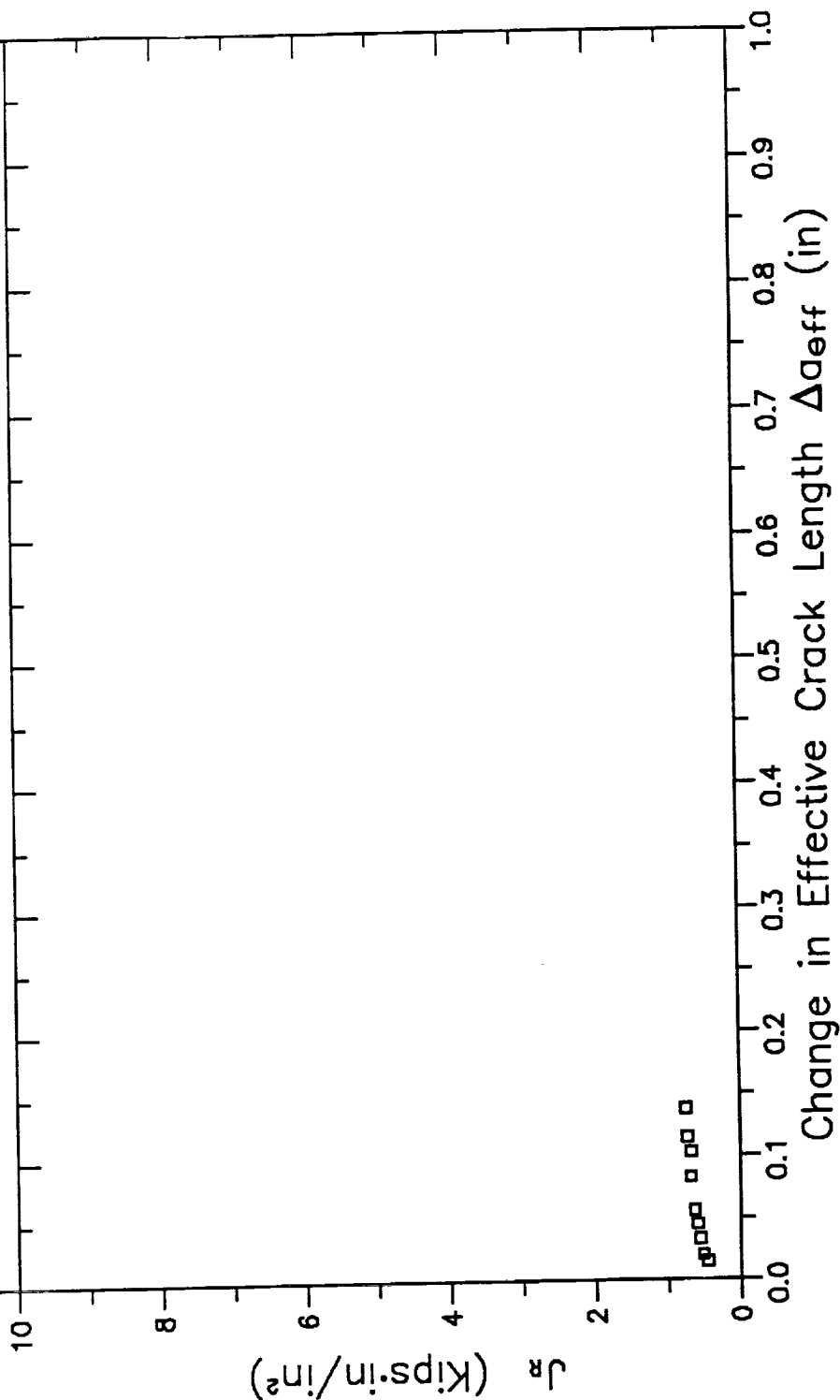


# RESISTANCE CURVE

LINDE 80,HSST 61W-67W,71W

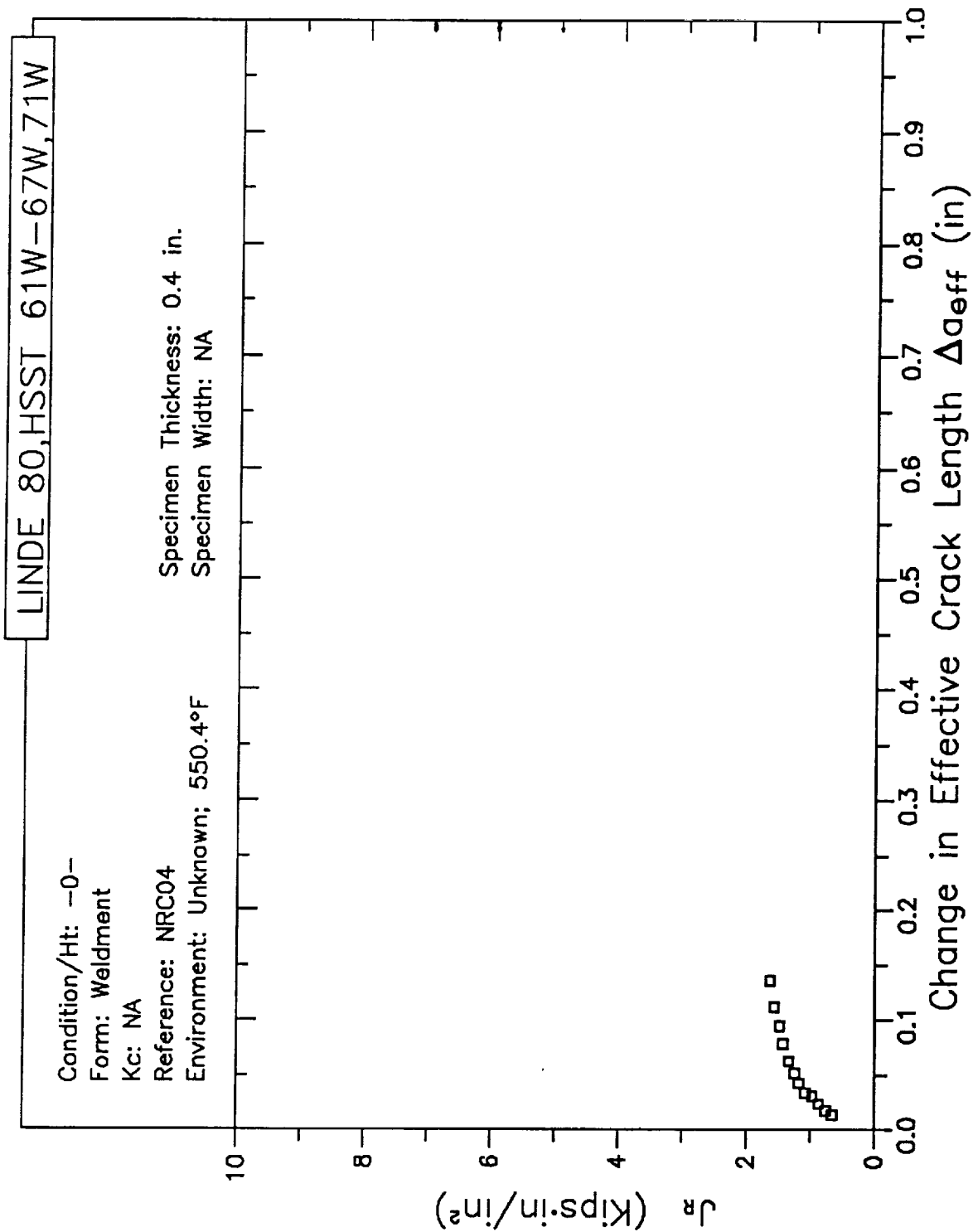
Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 550.4°F

Specimen Thickness: 0.4 in.  
Specimen Width: NA





# RESISTANCE CURVE

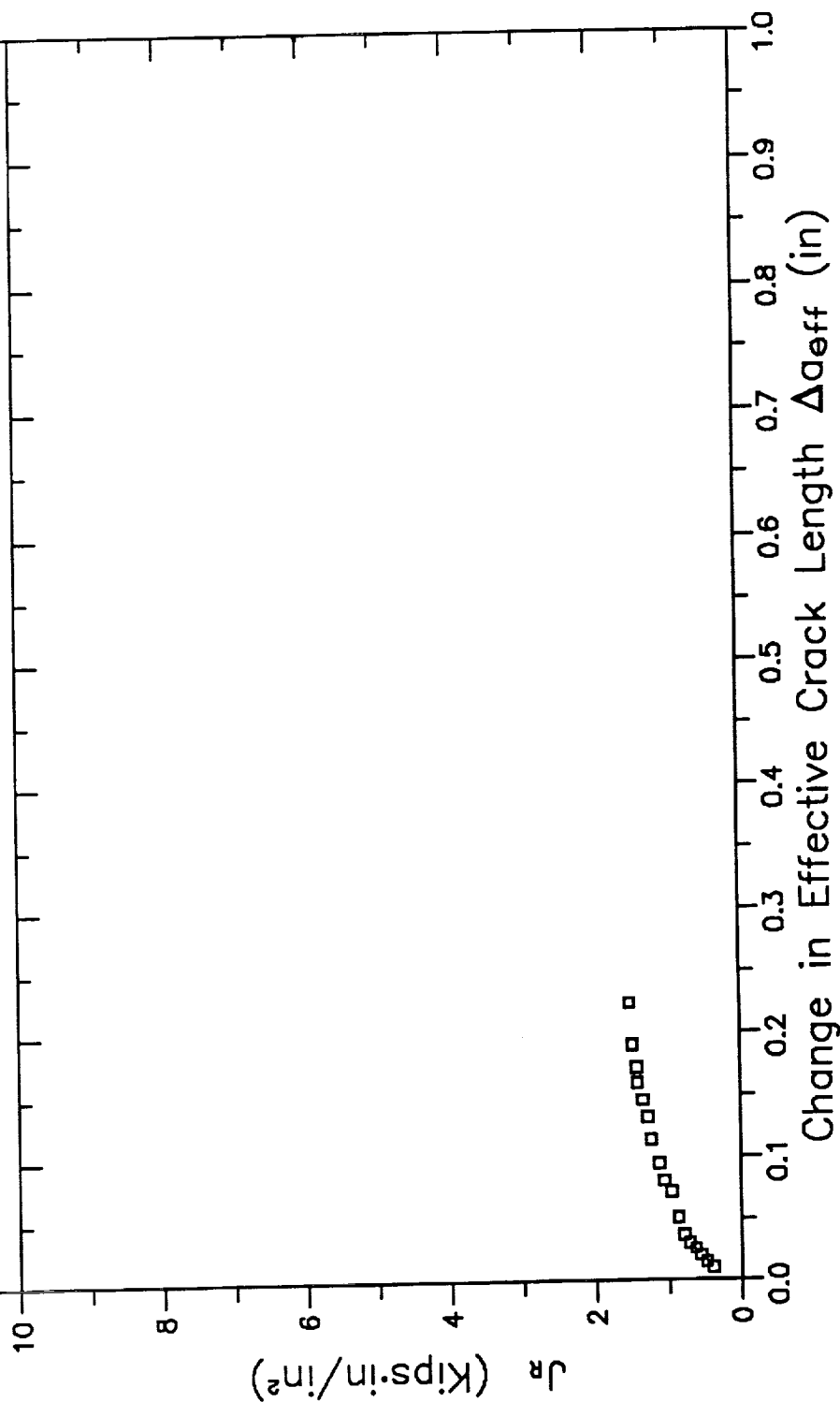


# RESISTANCE CURVE

LINDE 80, HSST 61W-67W, 71W

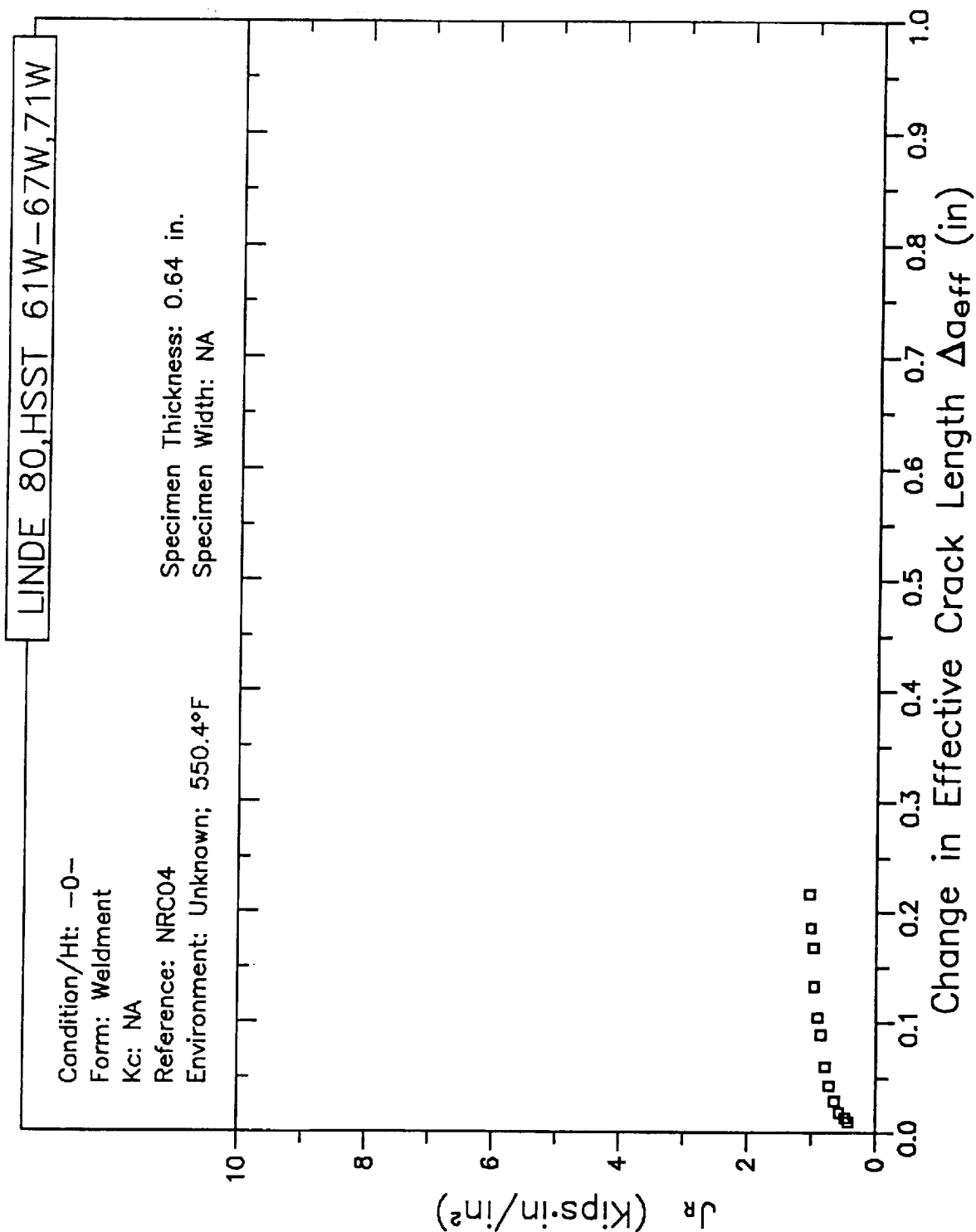
Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 550.4°F

Specimen Thickness: 0.64 in.  
Specimen Width: NA



B3-418

# RESISTANCE CURVE

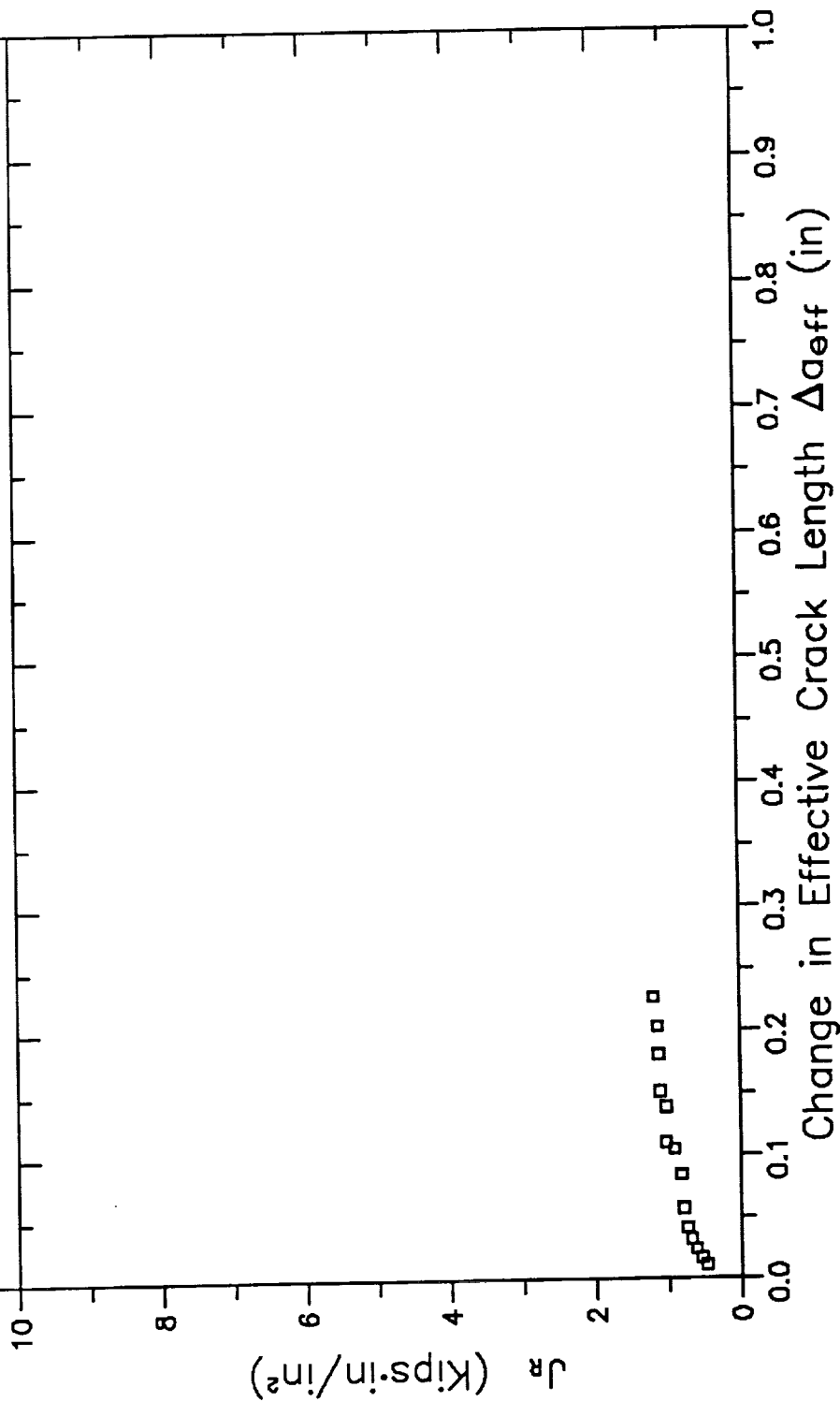


# RESISTANCE CURVE

LINDE 80,HSST 61W-67W,71W

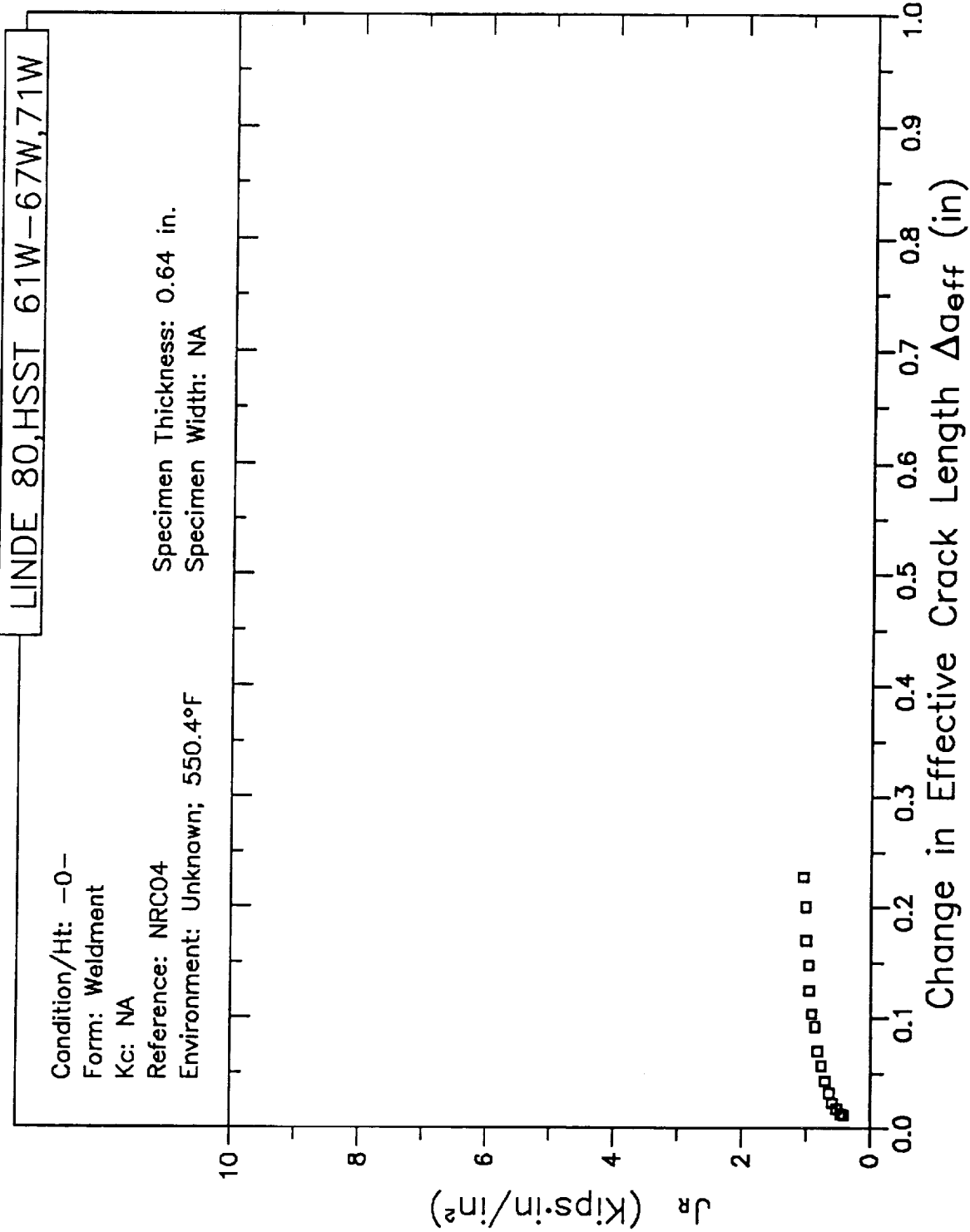
Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 550.4°F

Specimen Thickness: 0.64 in.  
Specimen Width: NA



B3-420

# RESISTANCE CURVE

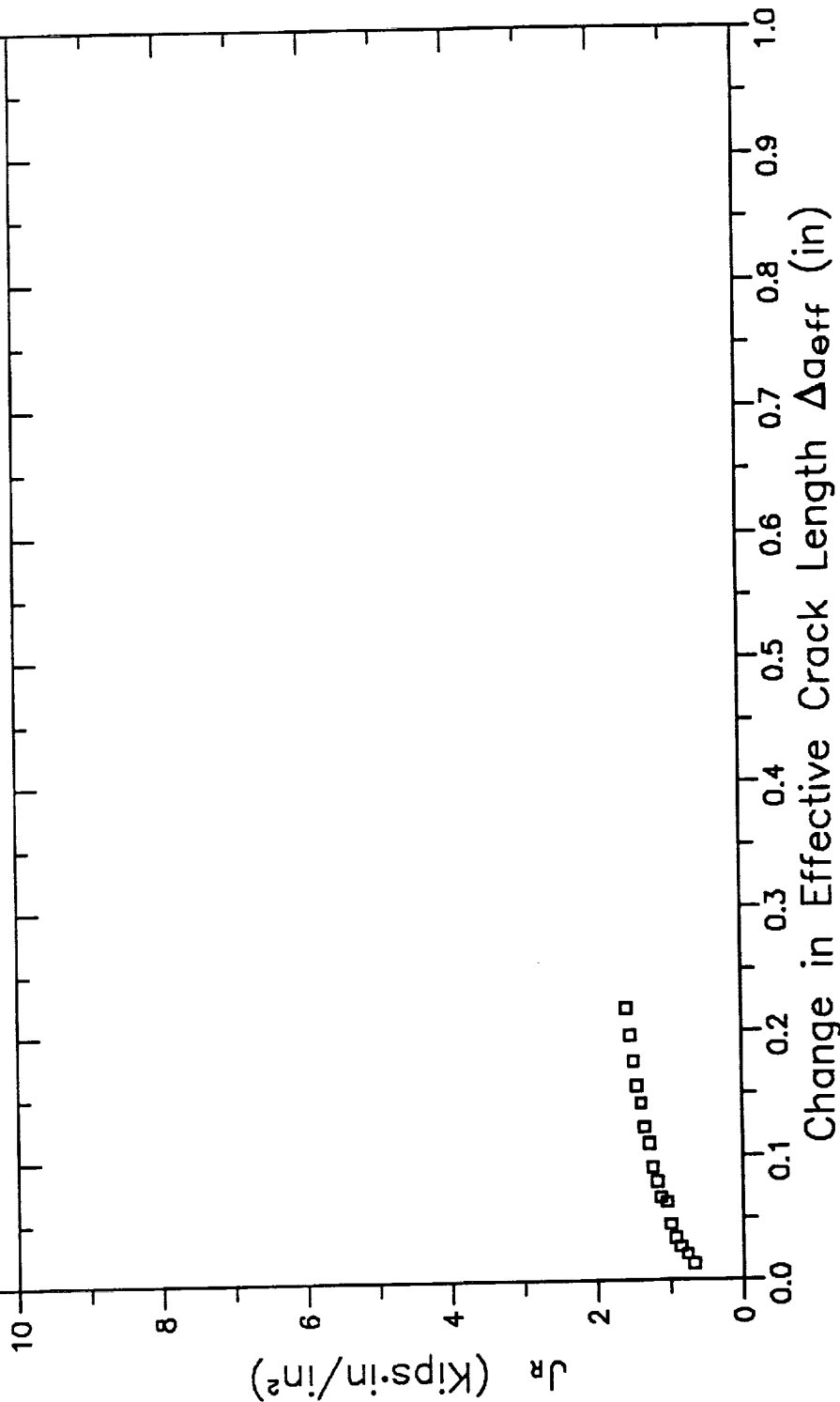


# RESISTANCE CURVE

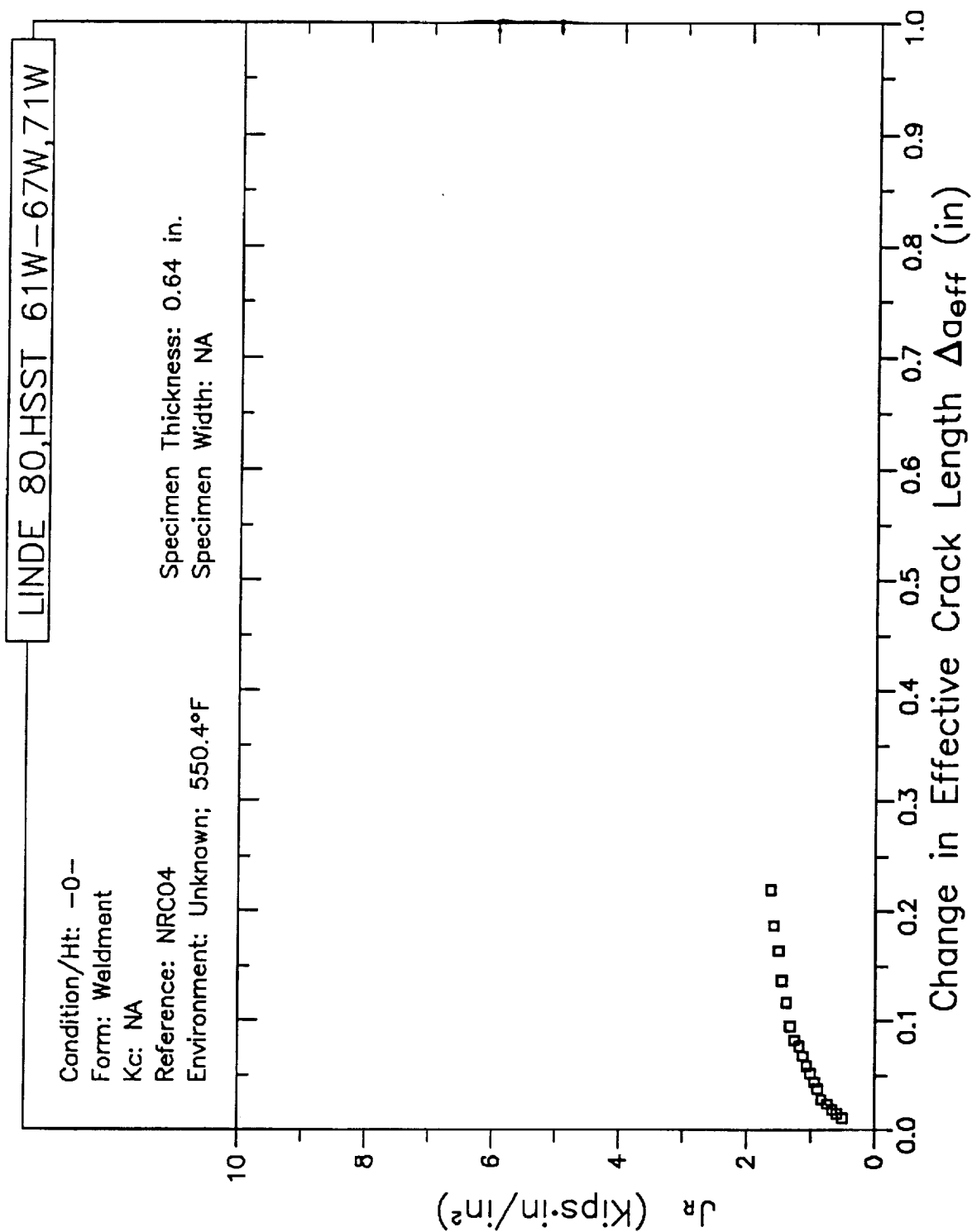
LINDE 80,HSST 61W-67W,71W

Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 550.4°F

Specimen Thickness: 0.64 in.  
Specimen Width: NA



# RESISTANCE CURVE

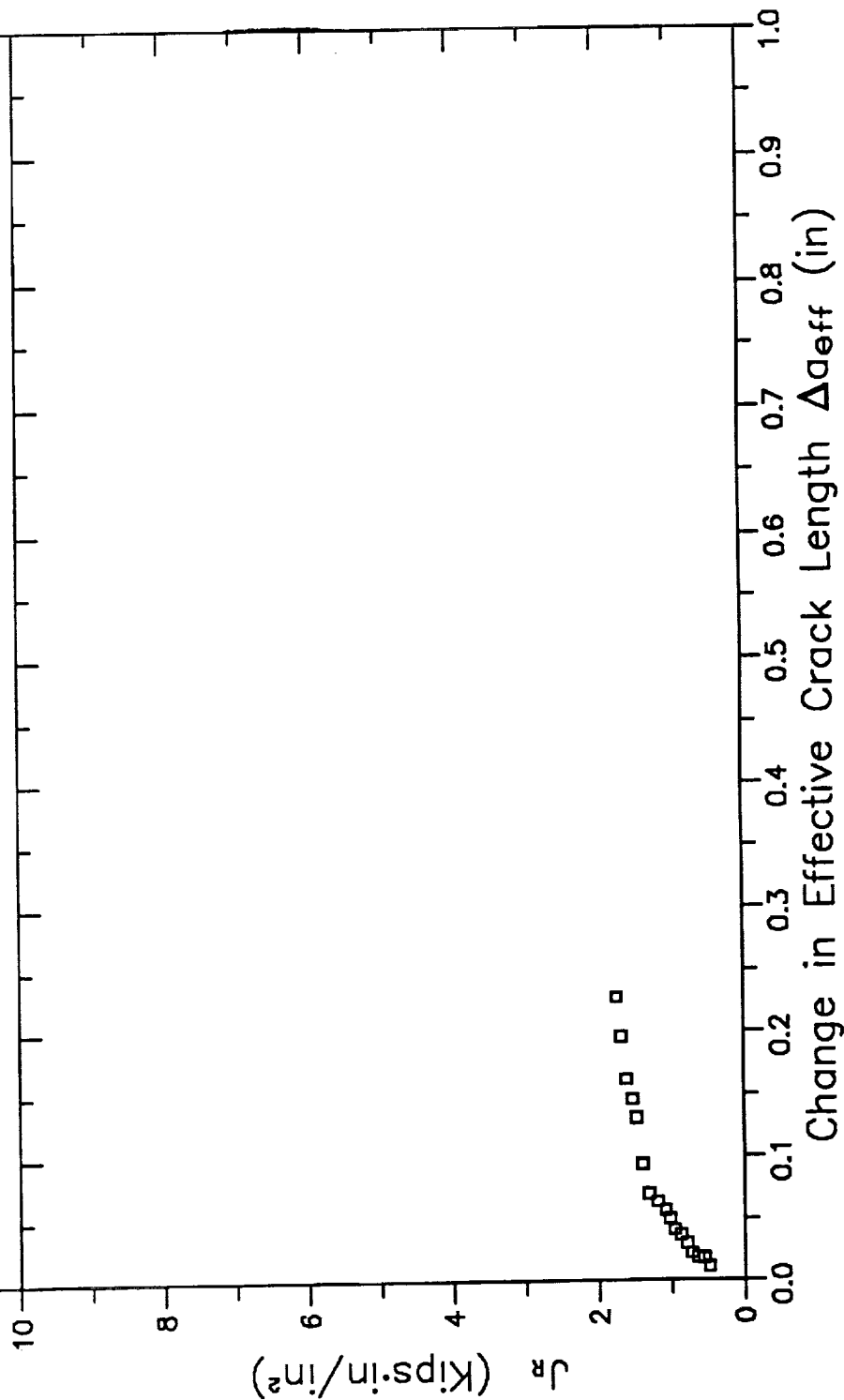


# RESISTANCE CURVE

LINDE 80,HSST 61W-67W,71W

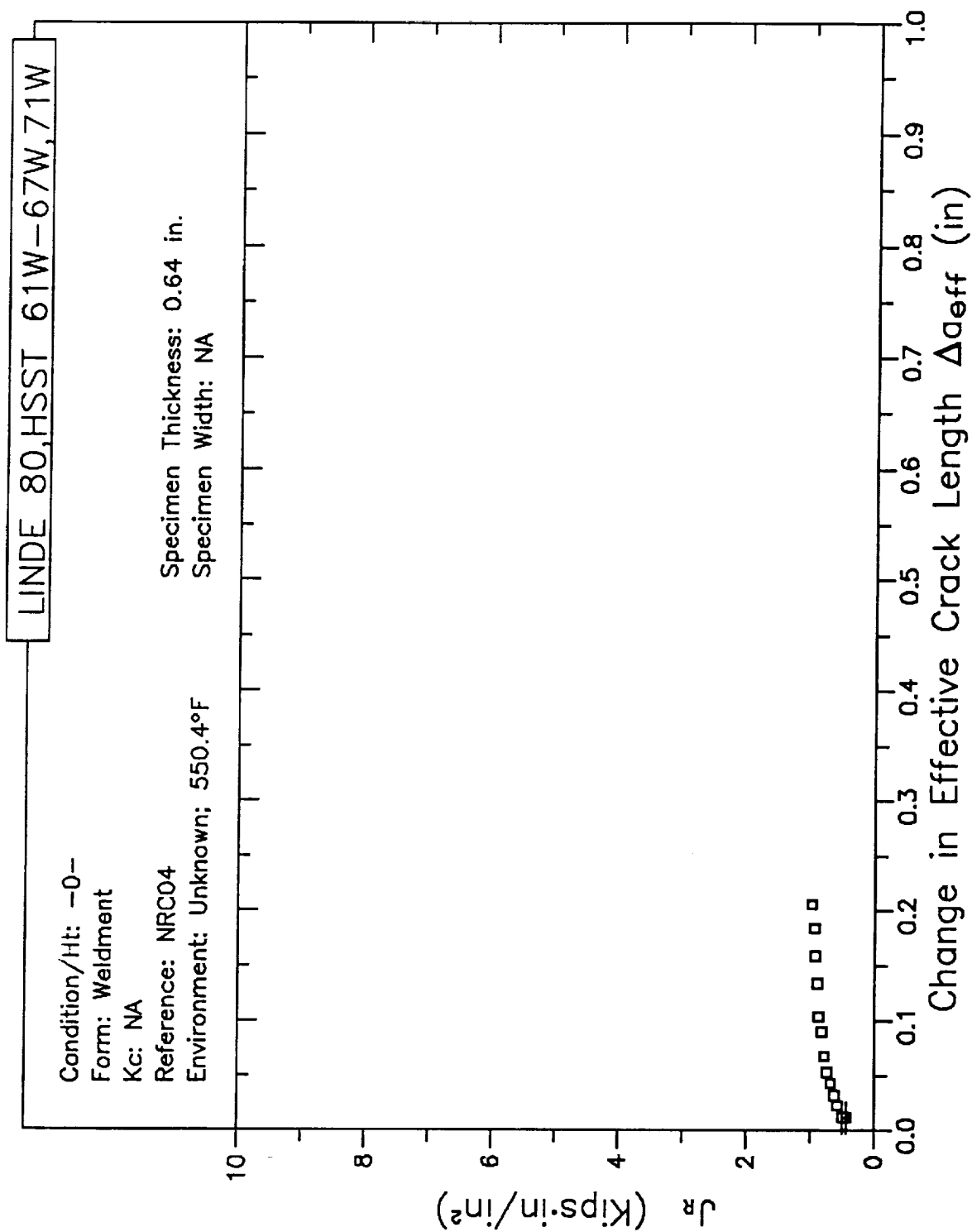
Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 550.4°F

Specimen Thickness: 0.64 in.  
Specimen Width: NA





# RESISTANCE CURVE

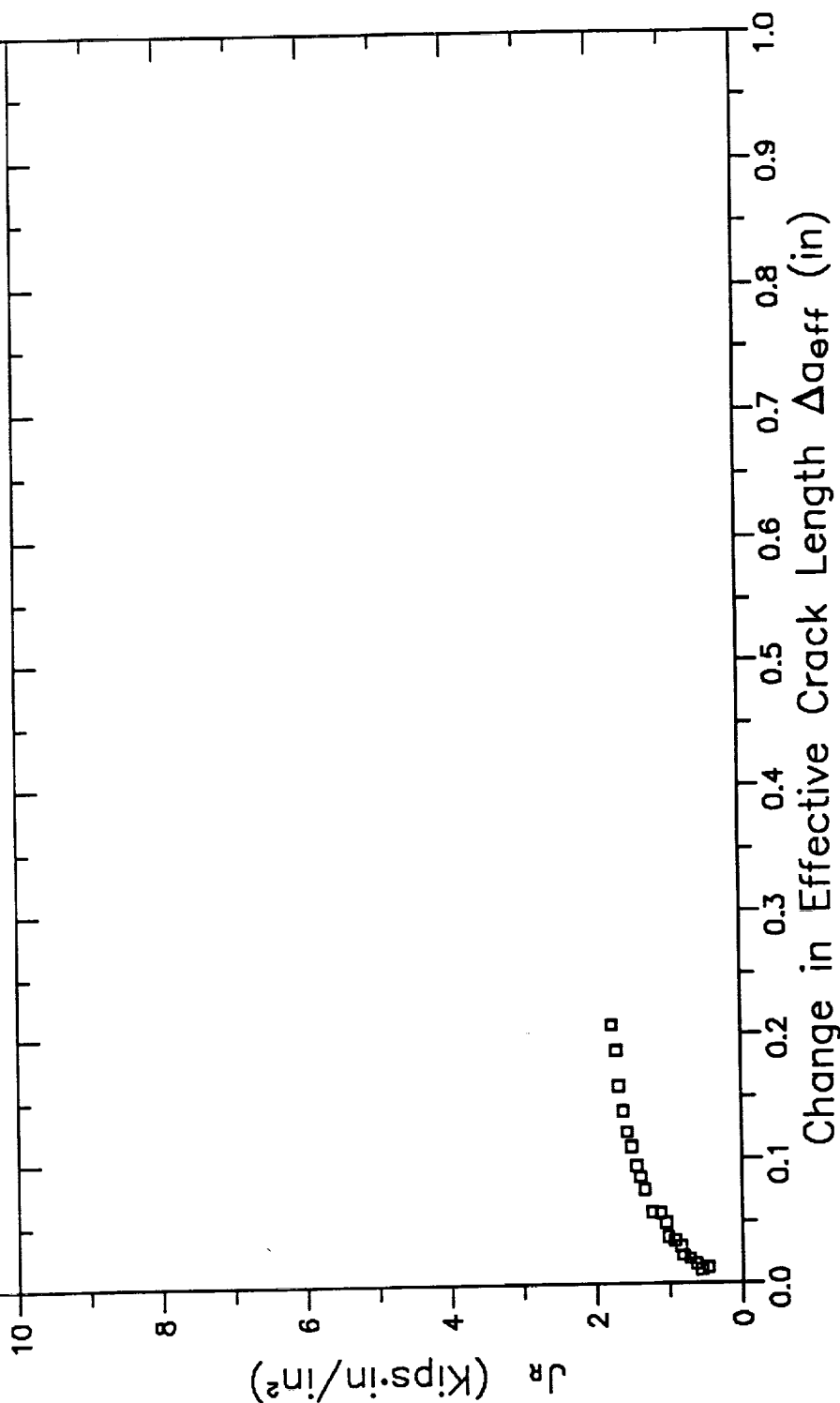


# RESISTANCE CURVE

LINDE 80,HSST 61W-67W,71W

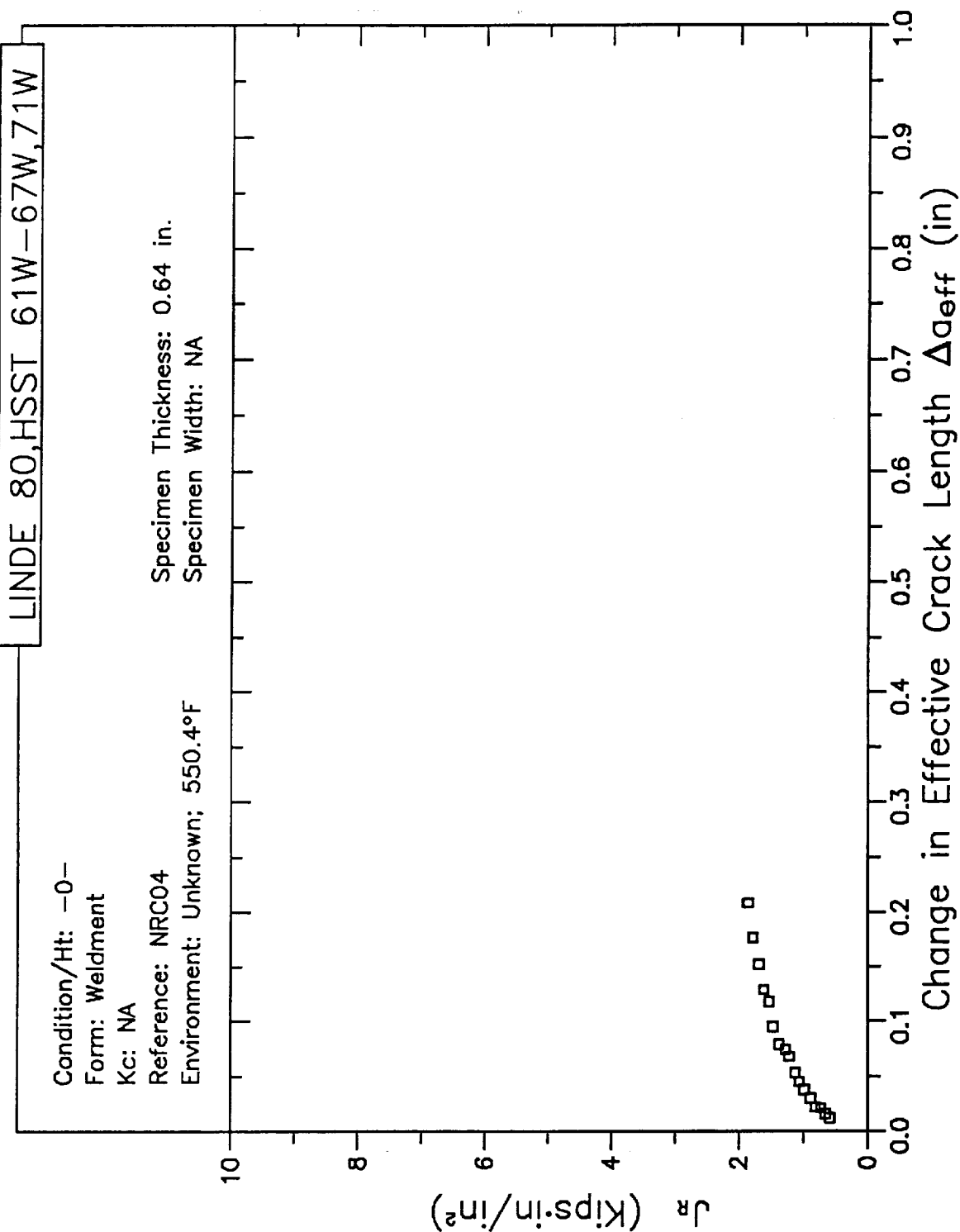
Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 550.4°F

Specimen Thickness: 0.64 in.  
Specimen Width: NA

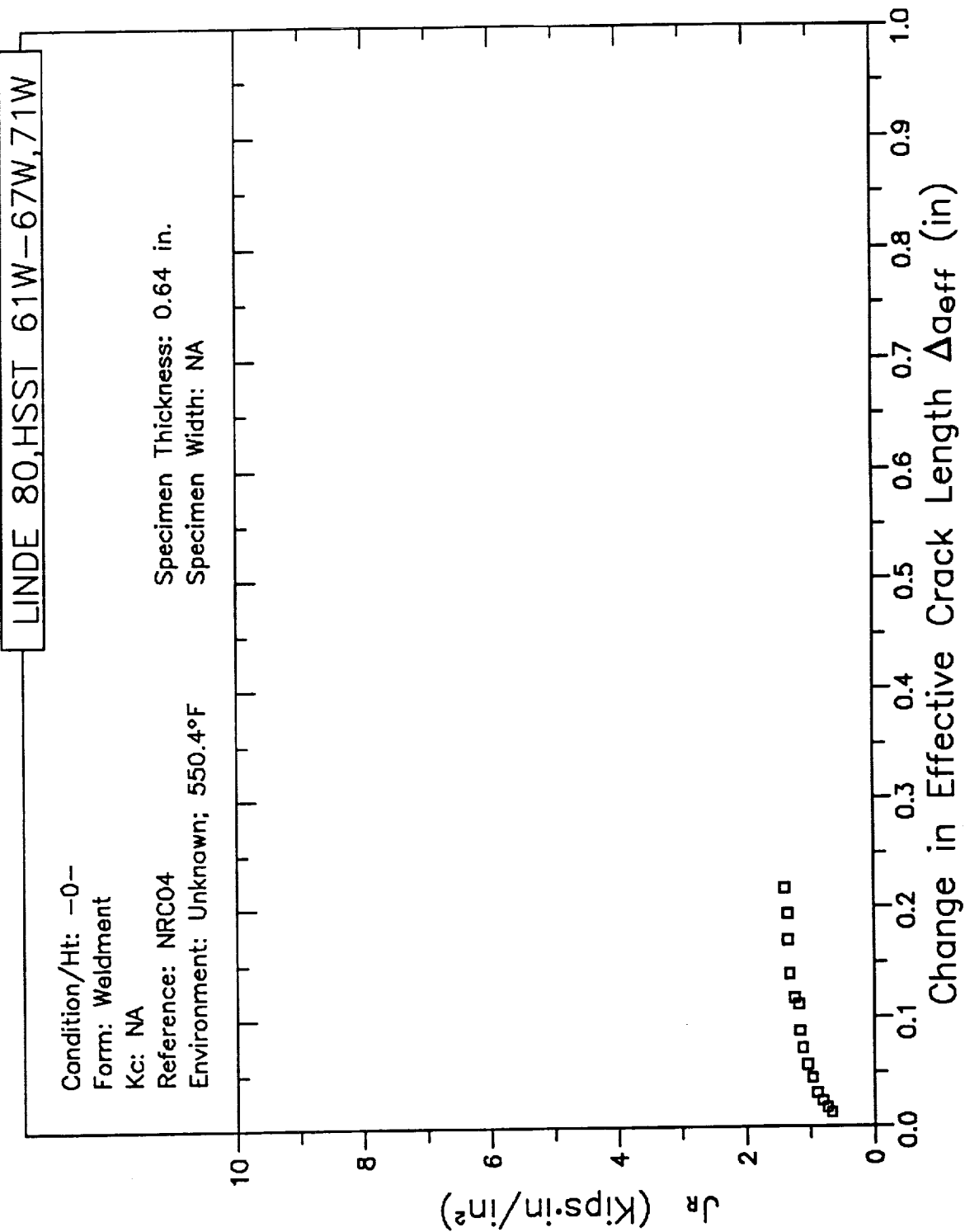


B3-426

# RESISTANCE CURVE



# RESISTANCE CURVE



B3-428

# RESISTANCE CURVE

LINDE 80,HSST 61W-67W,71W

Condition/Ht: -0-

Form: Weldment

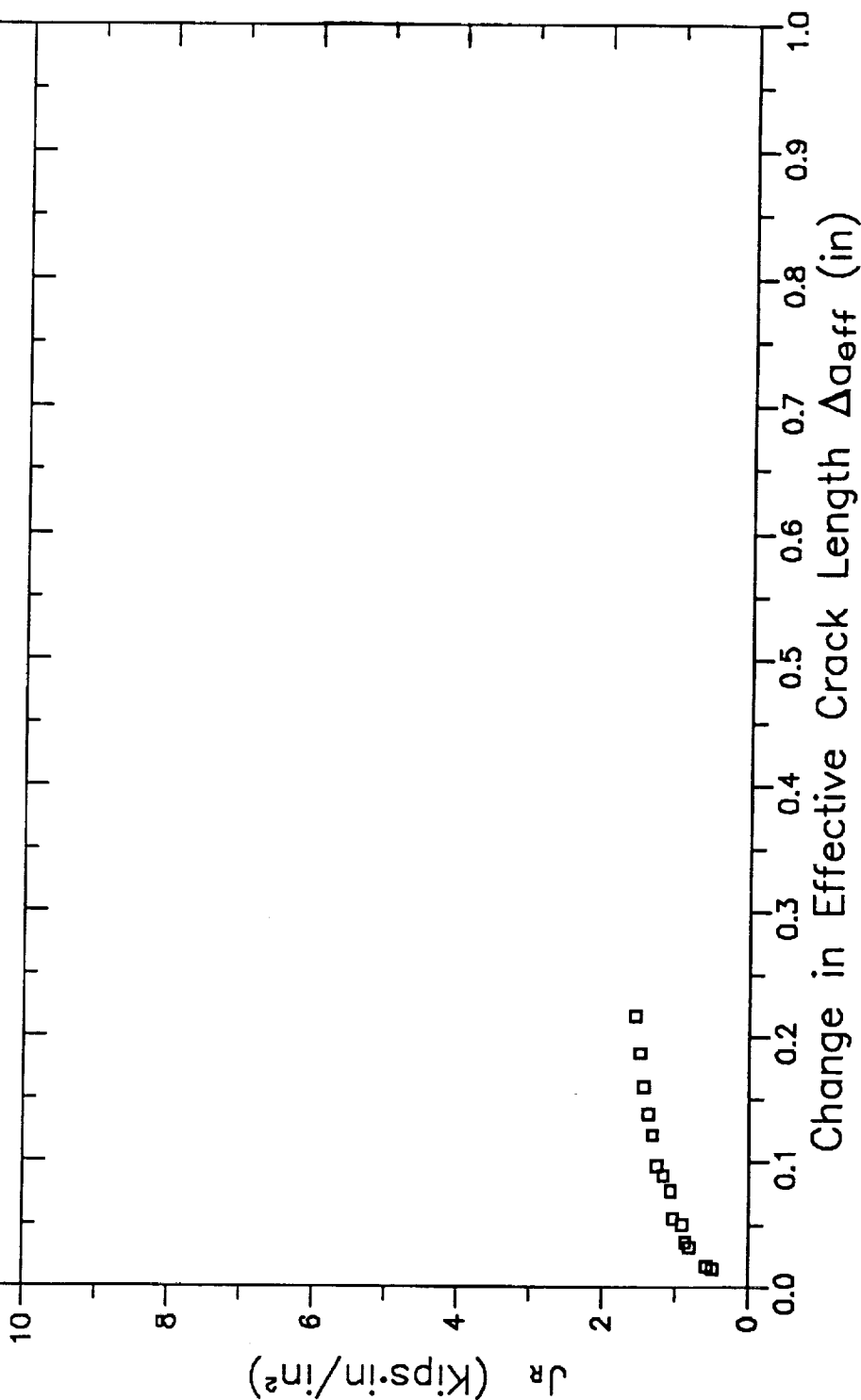
Kc: NA

Reference: NRC04

Environment: Unknown; 550.4°F

Specimen Thickness: 0.64 in.

Specimen Width: NA

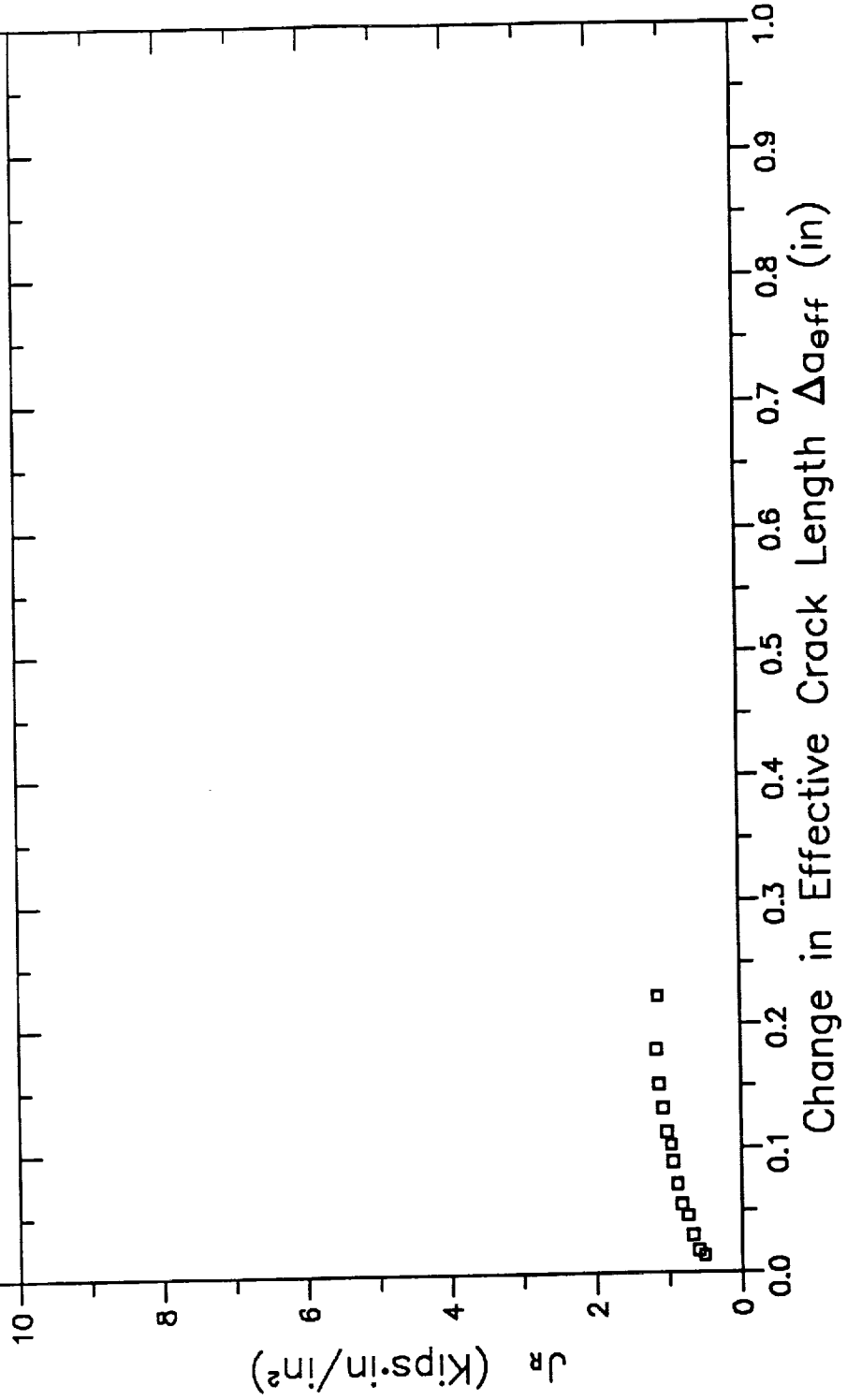


# RESISTANCE CURVE

LINDE 80,HSST 61W-67W,71W

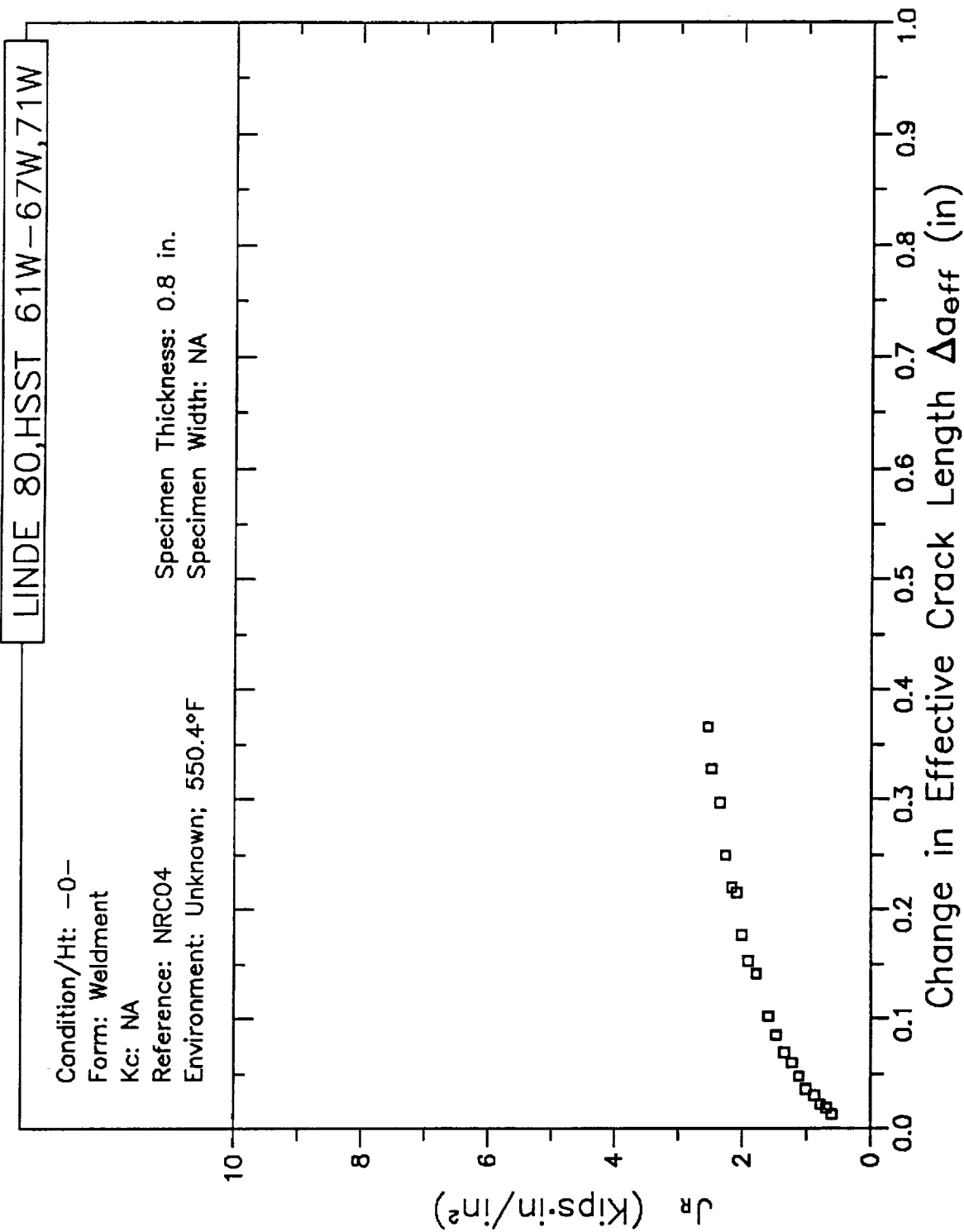
Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 550.4°F

Specimen Thickness: 0.72 in.  
Specimen Width: NA



B3-430

# RESISTANCE CURVE

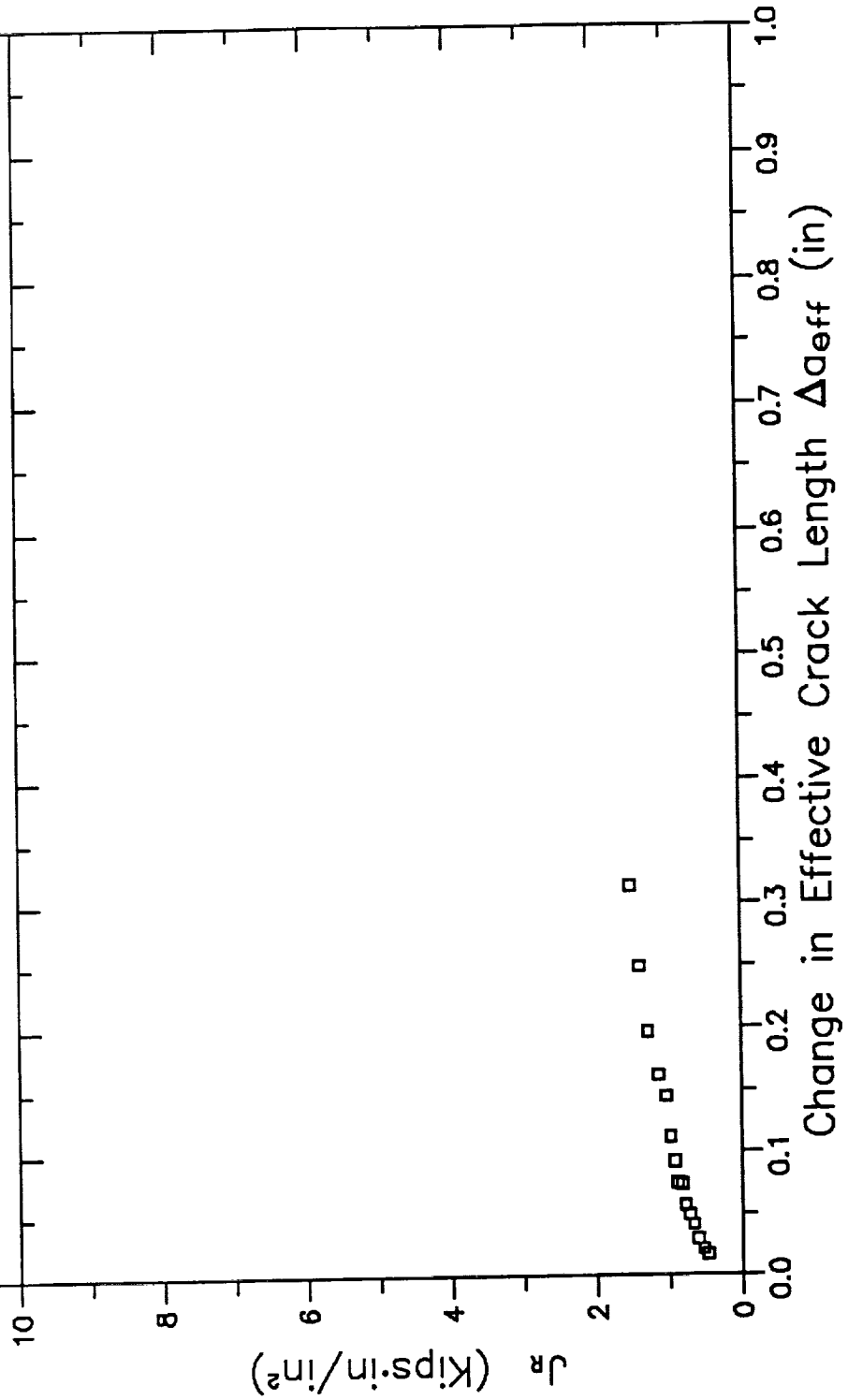


# RESISTANCE CURVE

LINDE 80,HSST 61W-67W,71W

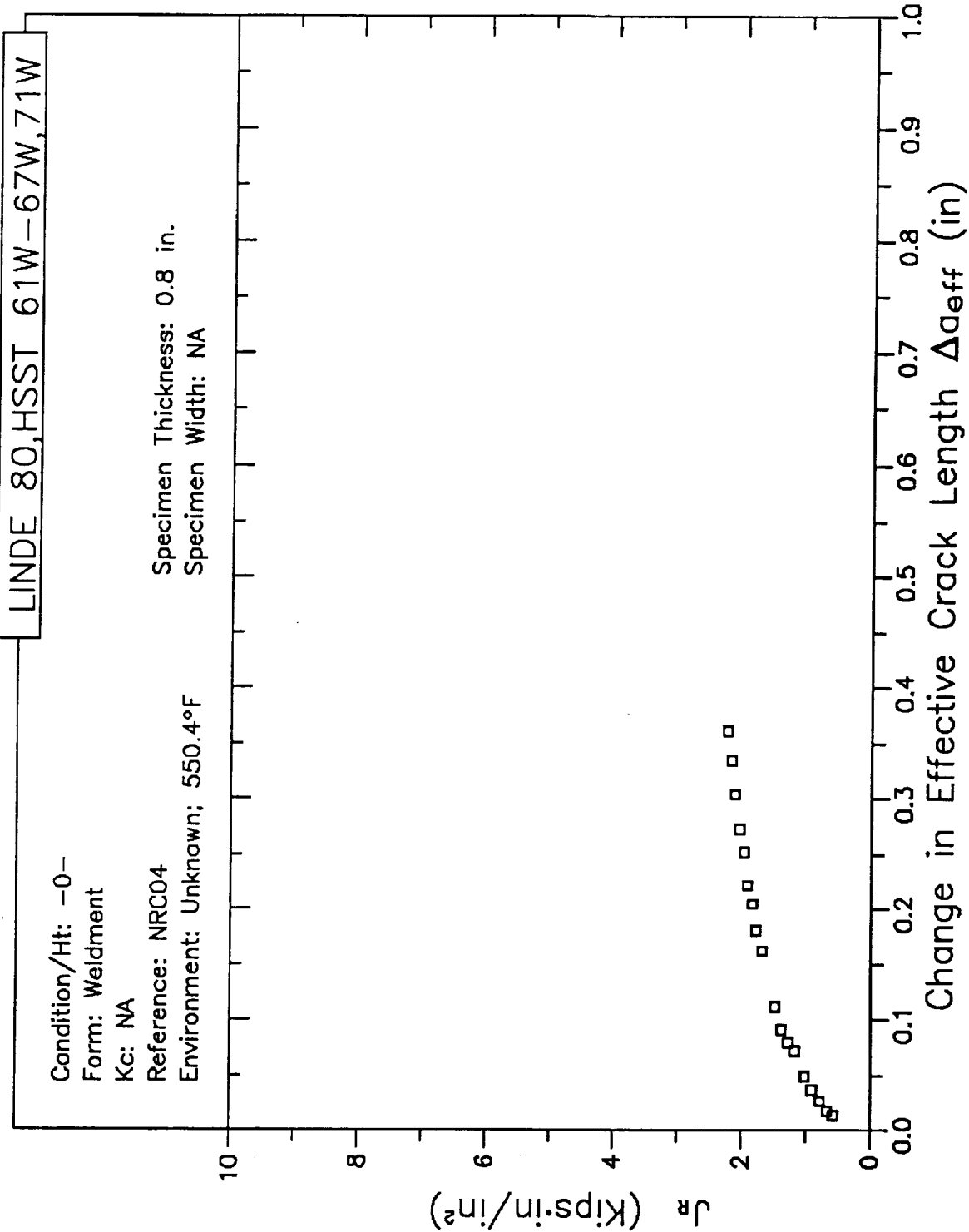
Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 550.4°F

Specimen Thickness: 0.8 in.  
Specimen Width: NA





# RESISTANCE CURVE



# RESISTANCE CURVE

LINDE 80,HSST 61W-67W,71W

Condition/Ht: -0-

Form: Weldment

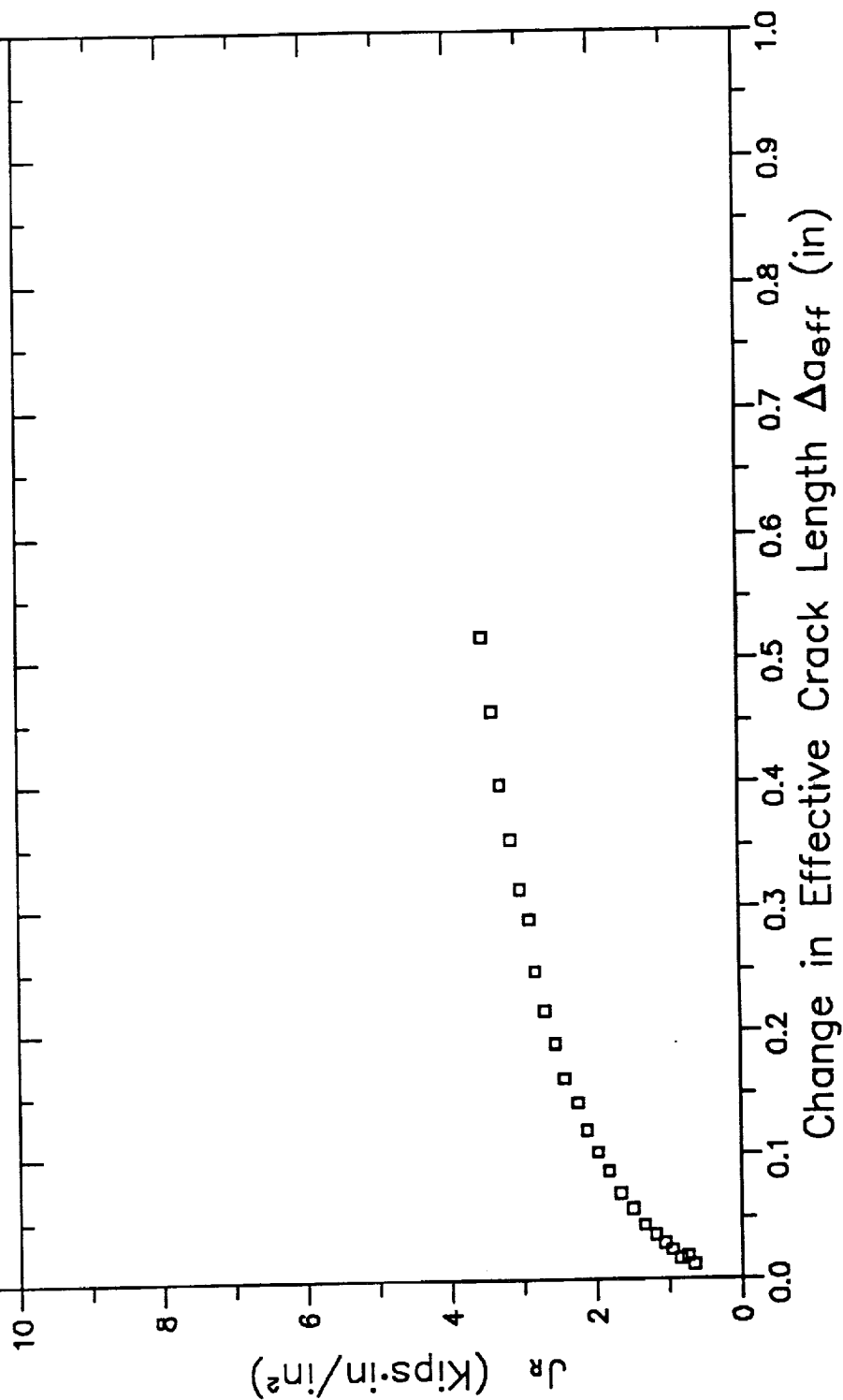
Kc: NA

Reference: NRC04

Environment: Unknown; 550.4°F

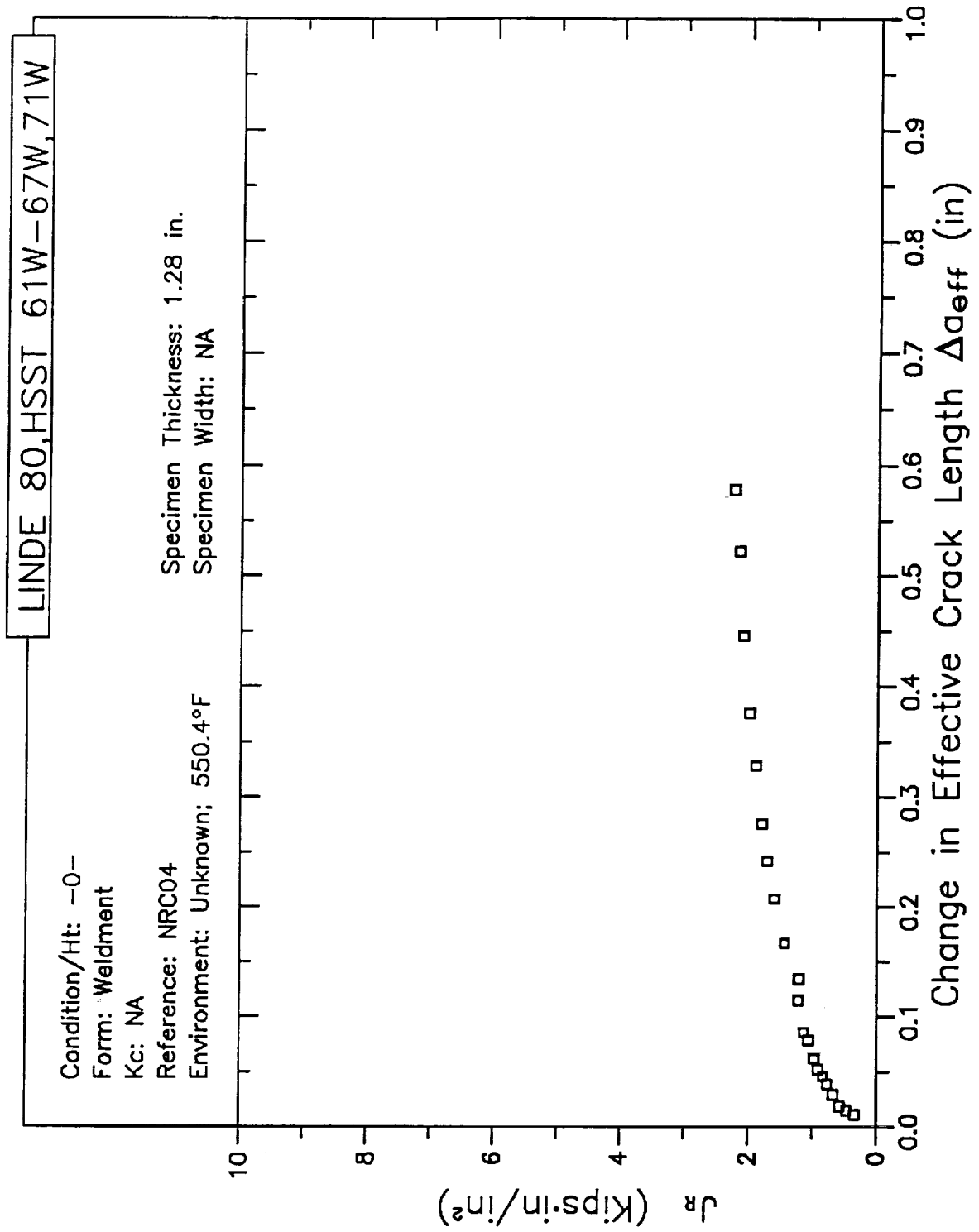
Specimen Thickness: 1.28 in.

Specimen Width: NA



B3-434

# RESISTANCE CURVE

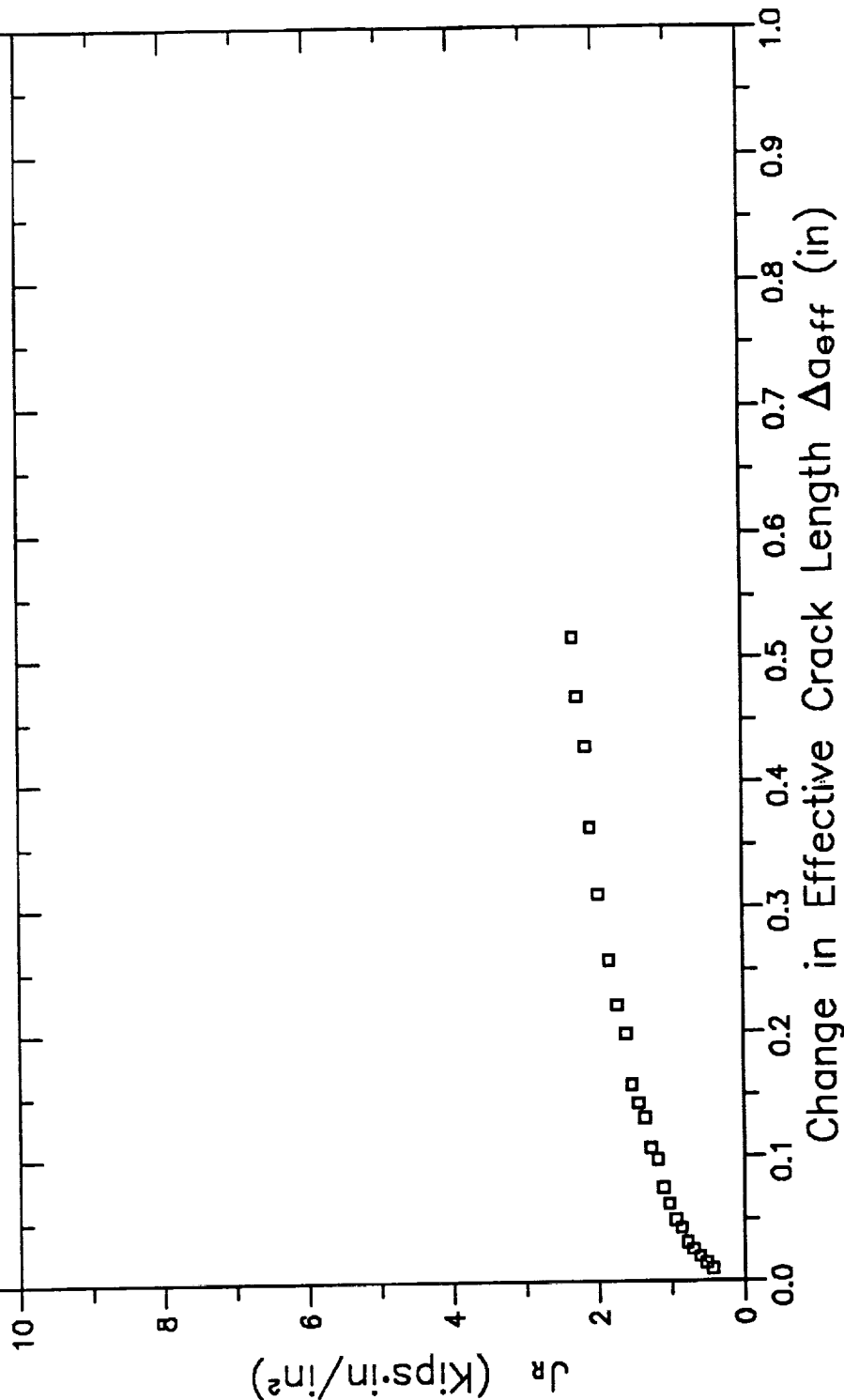


# RESISTANCE CURVE

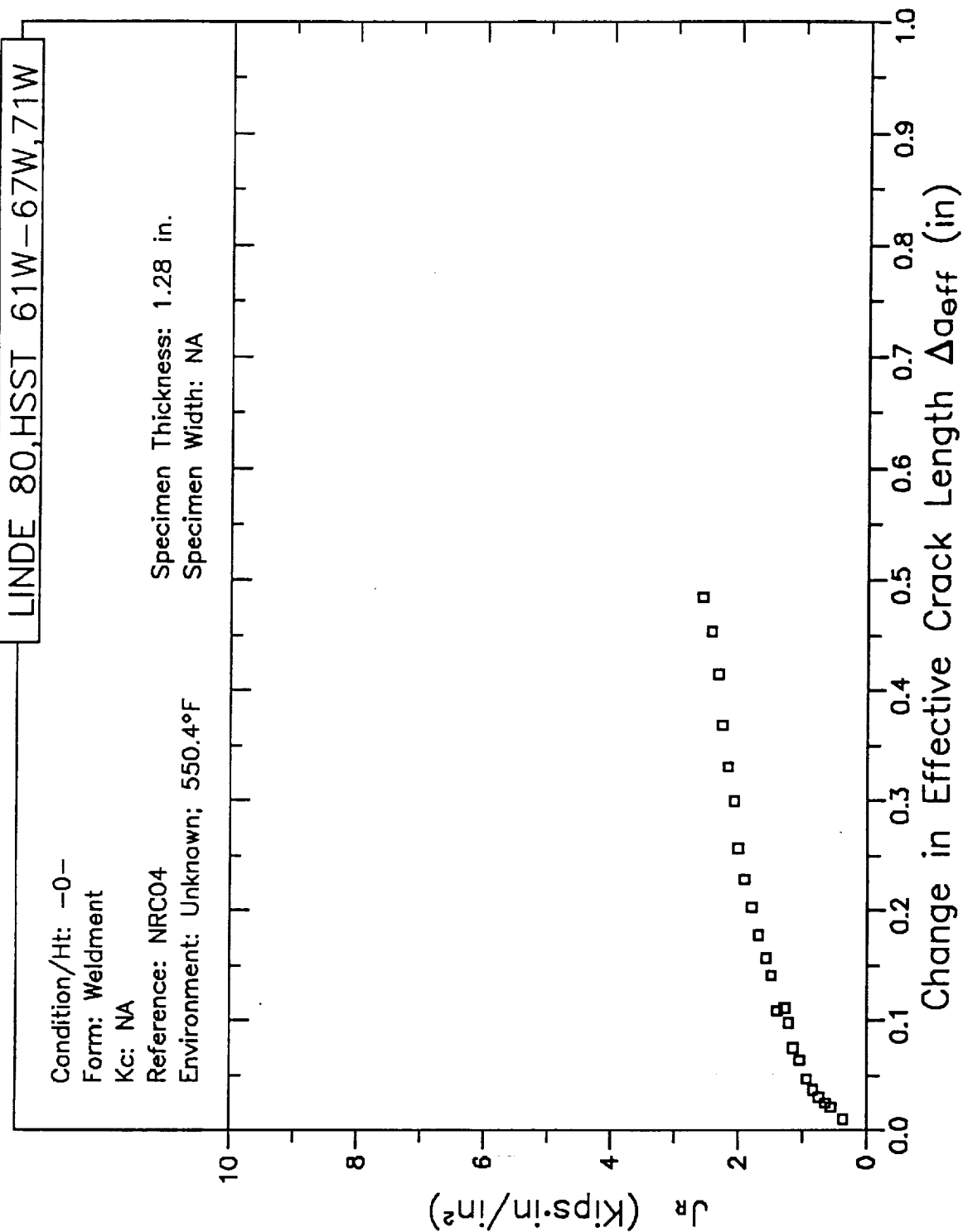
LINDE 80,HSST 61W-67W,71W

Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 550.4°F

Specimen Thickness: 1.28 in.  
Specimen Width: NA



# RESISTANCE CURVE

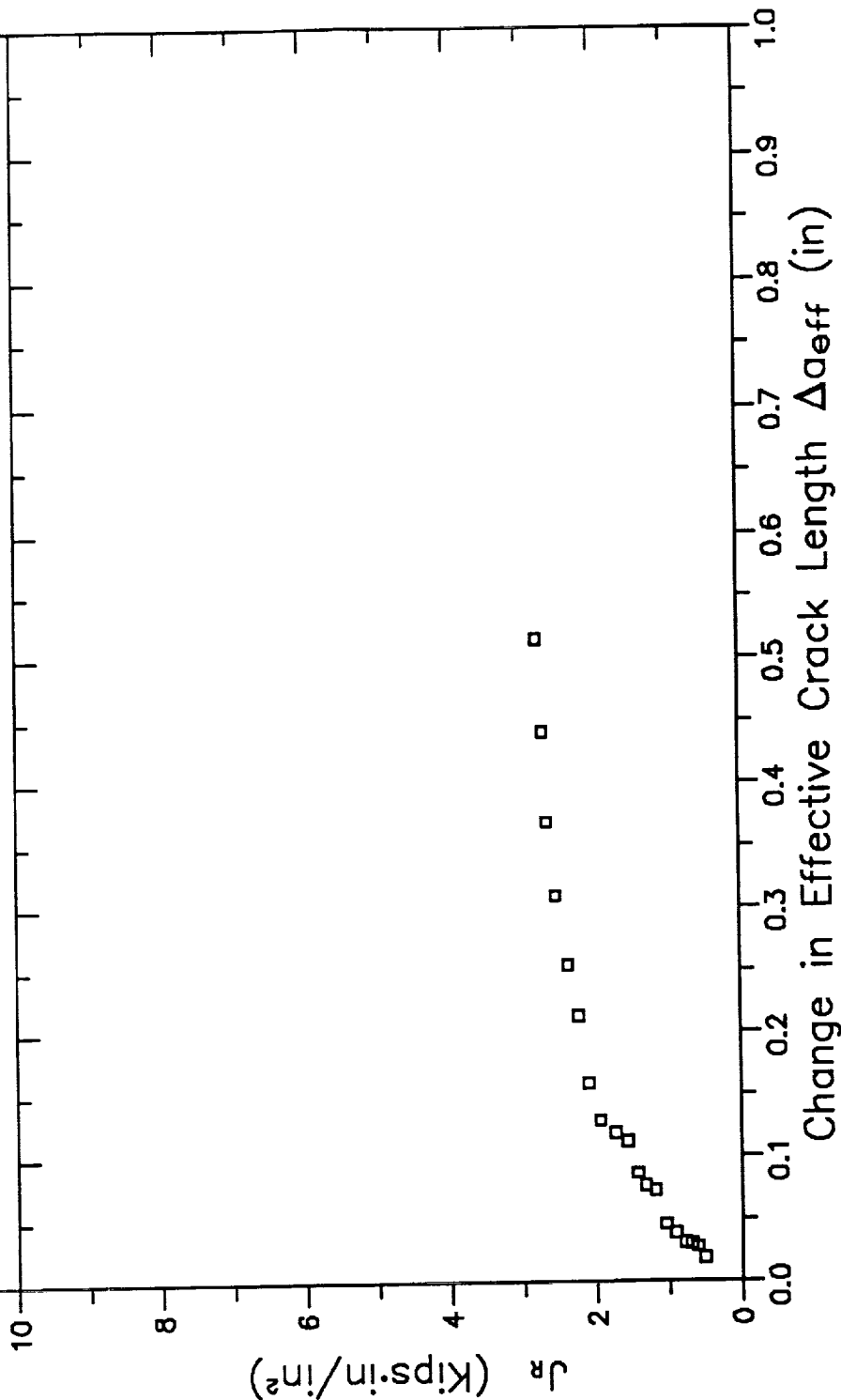


# RESISTANCE CURVE

LINDE 80,HSST 61W-67W,71W

Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 550.4°F

Specimen Thickness: 1.28 in.  
Specimen Width: NA



B3-438

# RESISTANCE CURVE

LINDE 80,HSST 61W-67W,71W

Condition/Ht: -0-

Form: Weldment

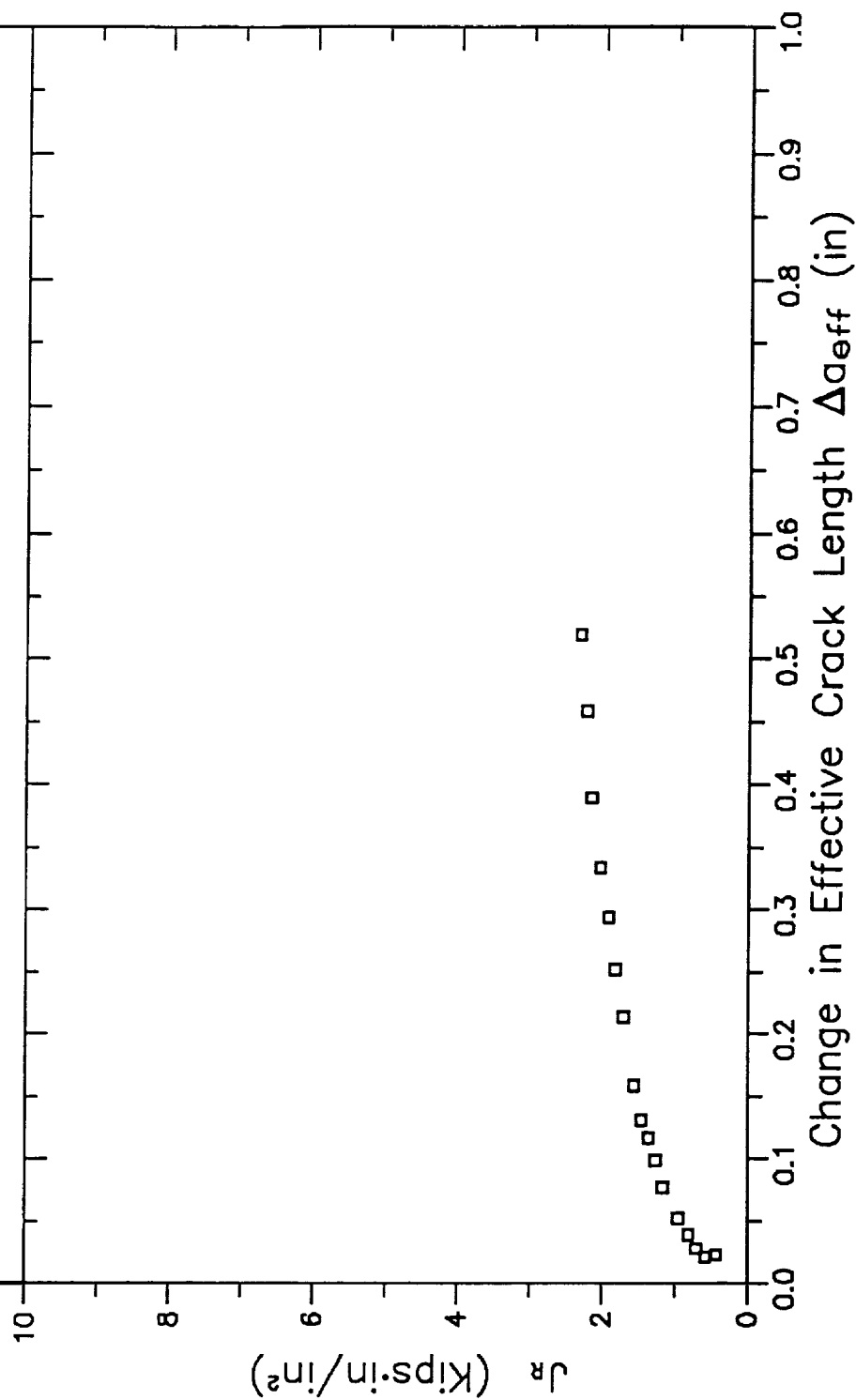
Kc: NA

Reference: NRC04

Environment: Unknown; 550.4°F

Specimen Thickness: 1.28 in.

Specimen Width: NA

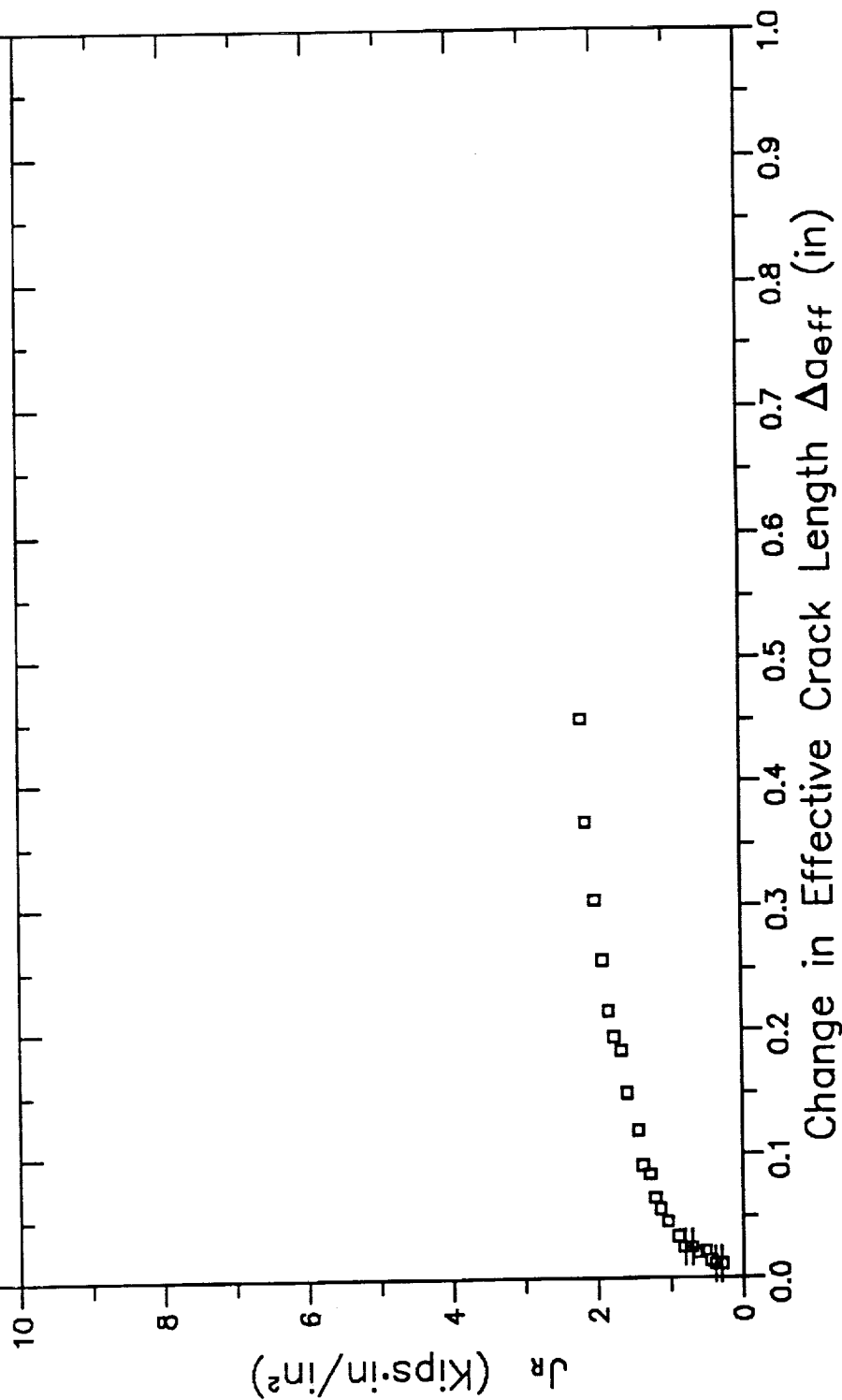


# RESISTANCE CURVE

LINDE 80,HSST 61W-67W,71W

Condition/Ht: -0-  
Form: Weldment  
Kc: NA  
Reference: NRC04  
Environment: Unknown; 550.4°F

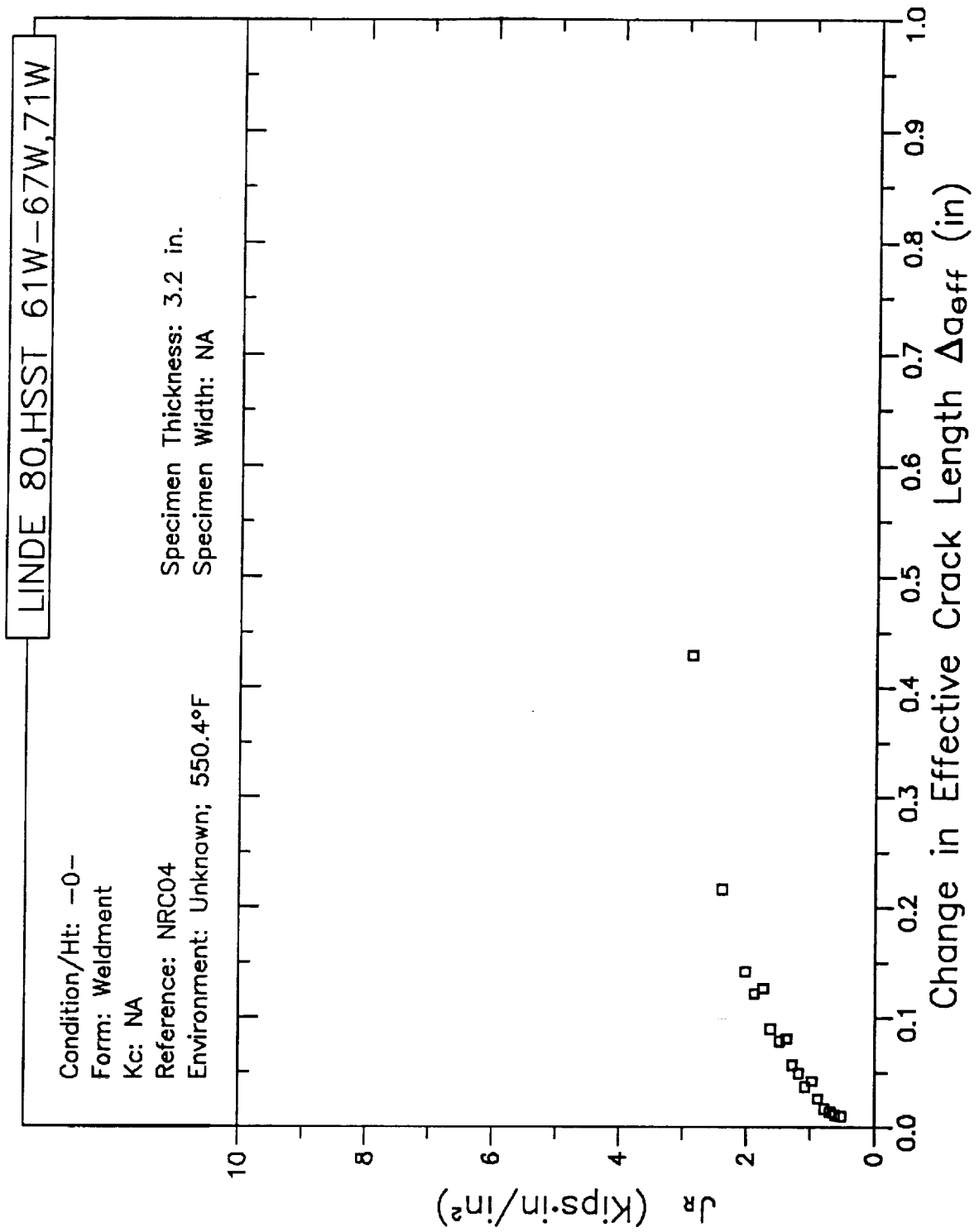
Specimen Thickness: 1.28 in.  
Specimen Width: NA



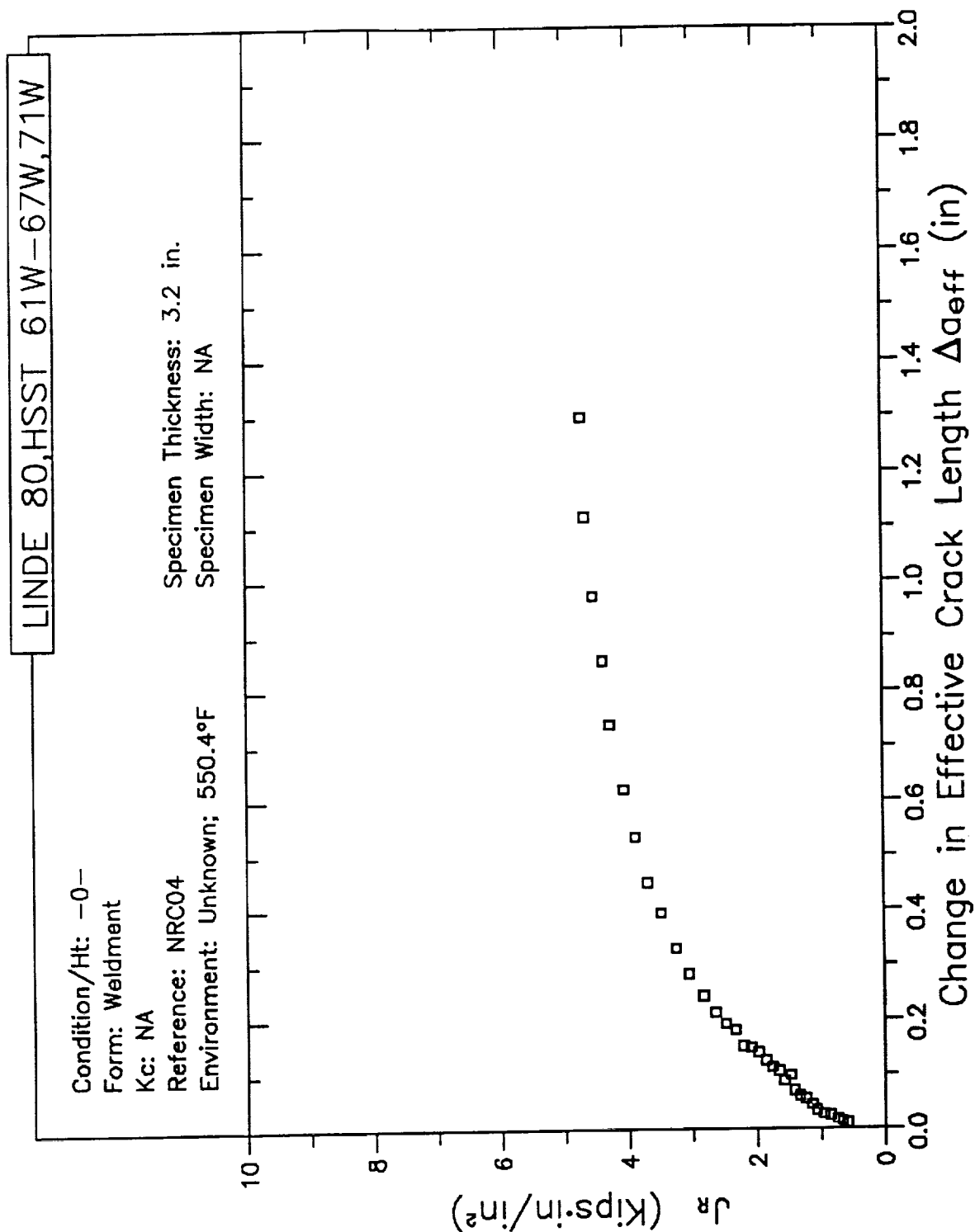
B3-440



# RESISTANCE CURVE

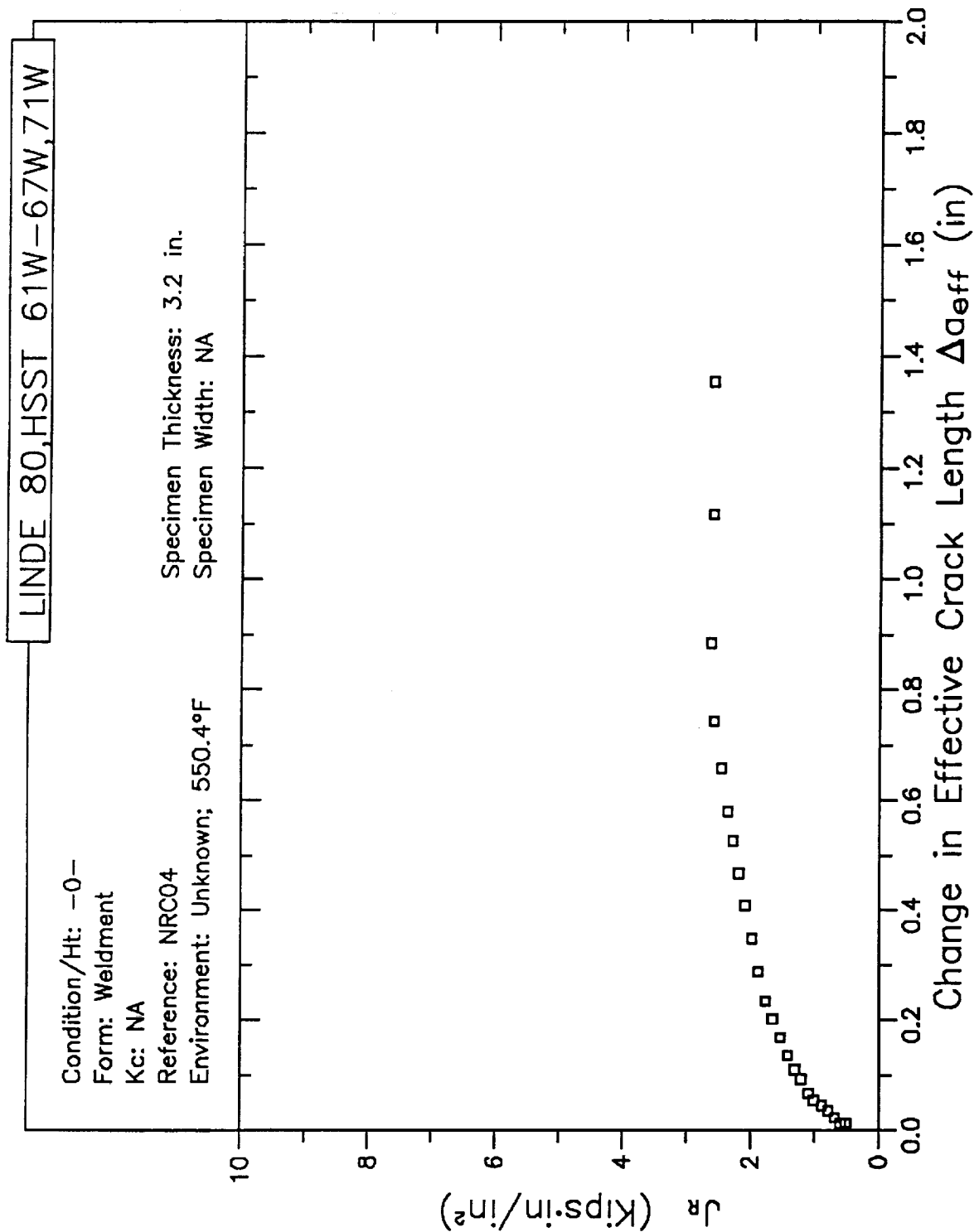


# RESISTANCE CURVE

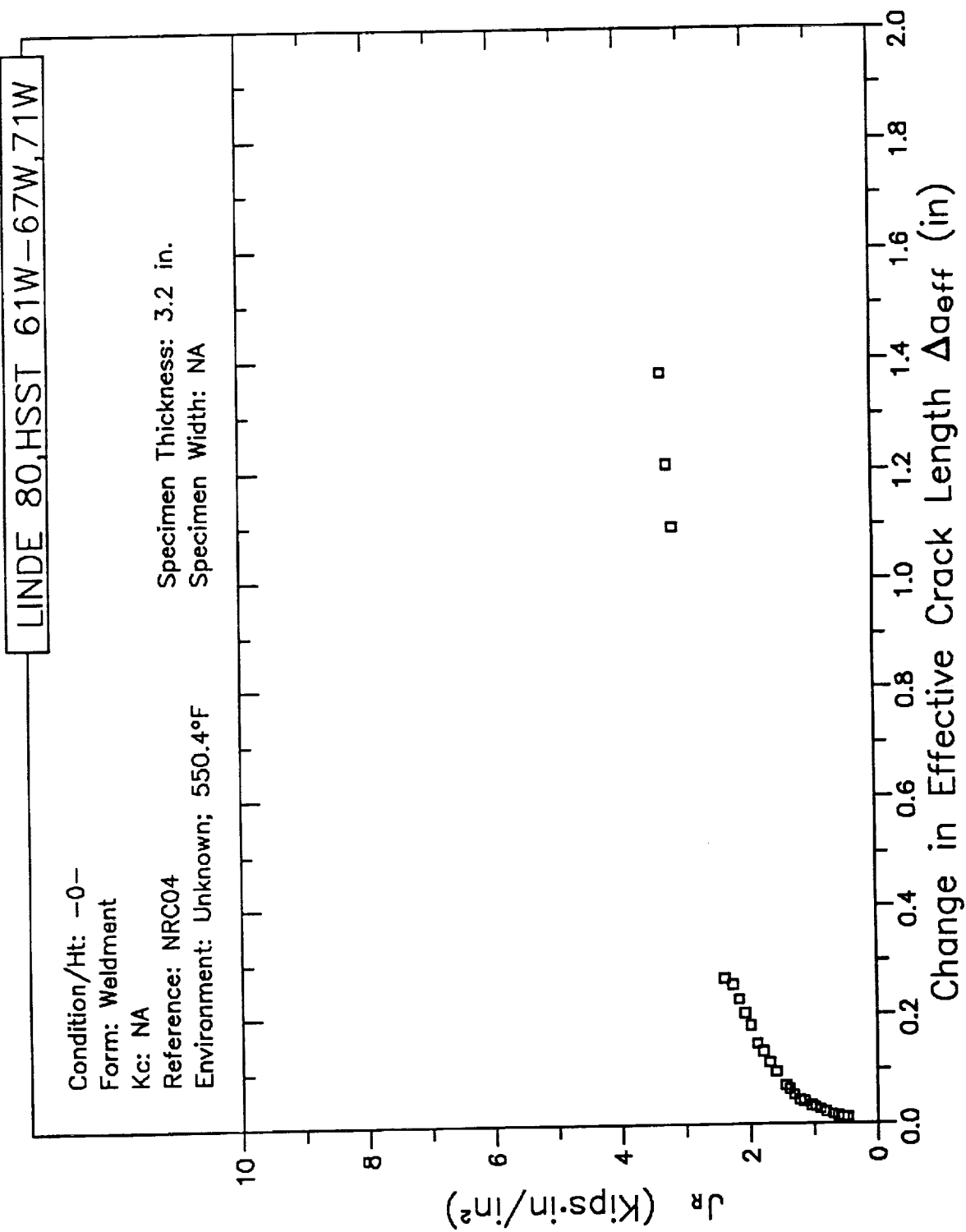


B3-442

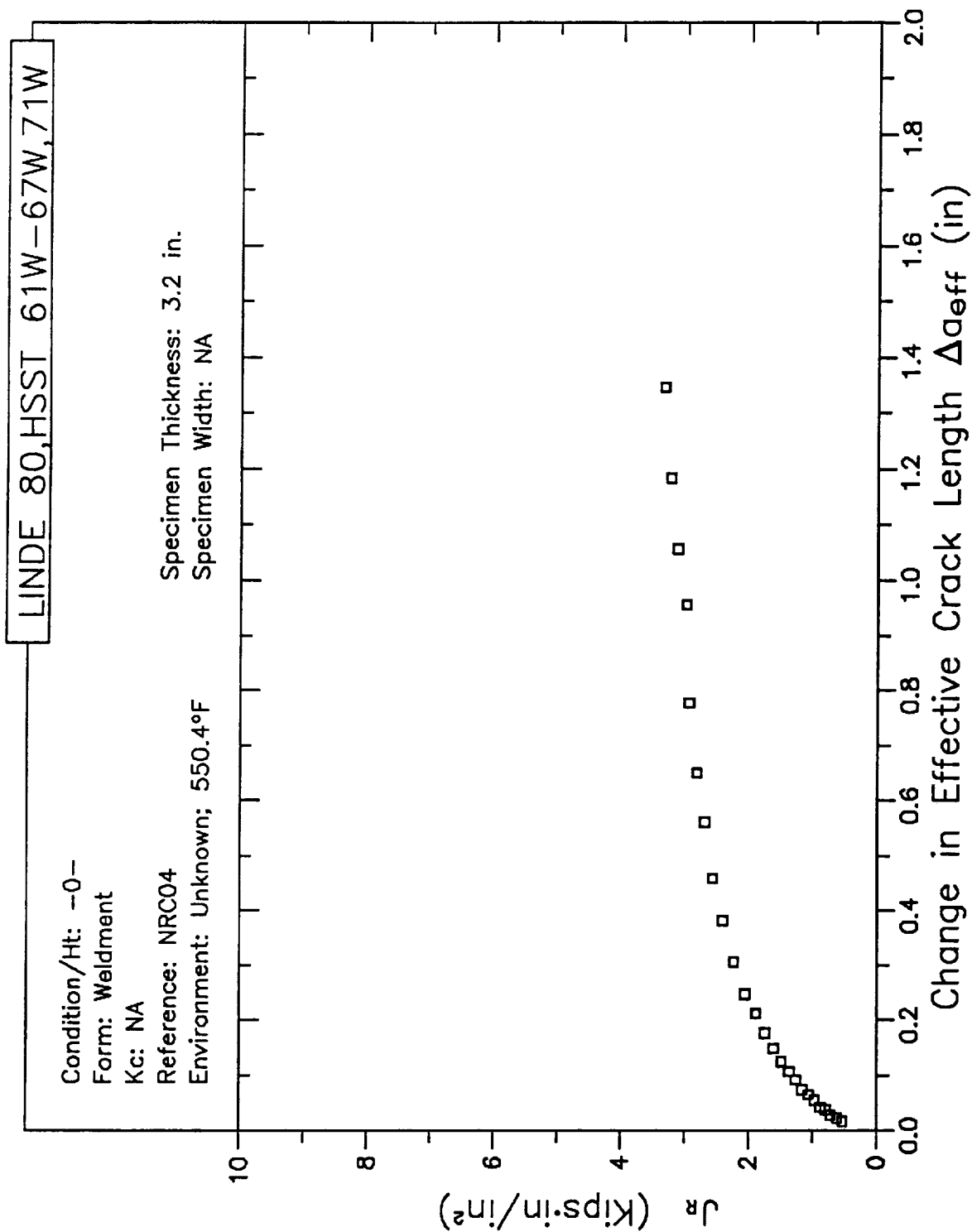
# RESISTANCE CURVE



# RESISTANCE CURVE



# RESISTANCE CURVE



# RESISTANCE CURVE

SA106 GRADE B

Condition/Ht: FLATTENED AND STRESS RELIEF AT 1099 F (2HR)

Form: Pipe

Kc: NA

Reference: REG01

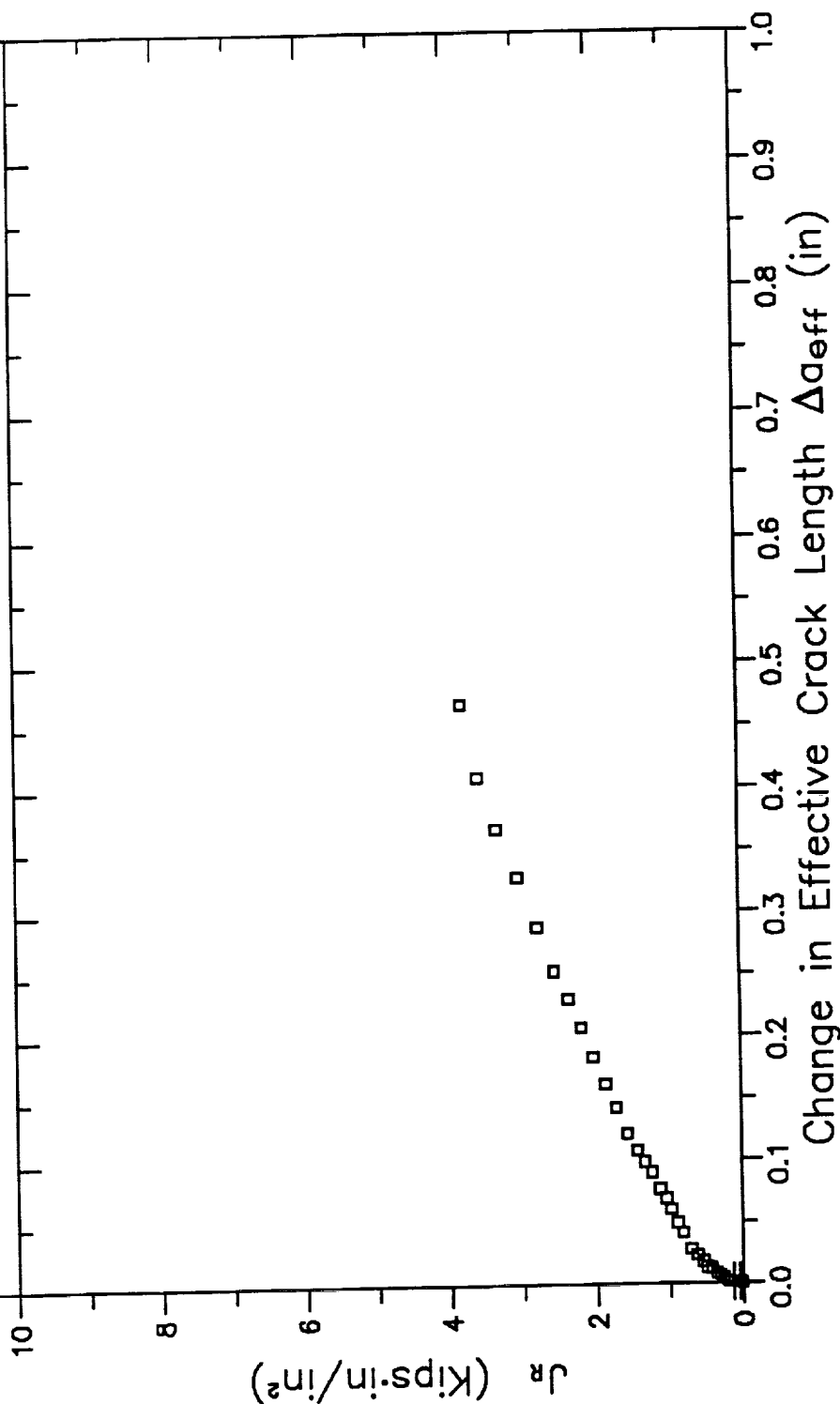
Environment: Unknown; 73.4°F

Type: Compact Specimen (Side Grooved)

Specimen Orientation: C-L

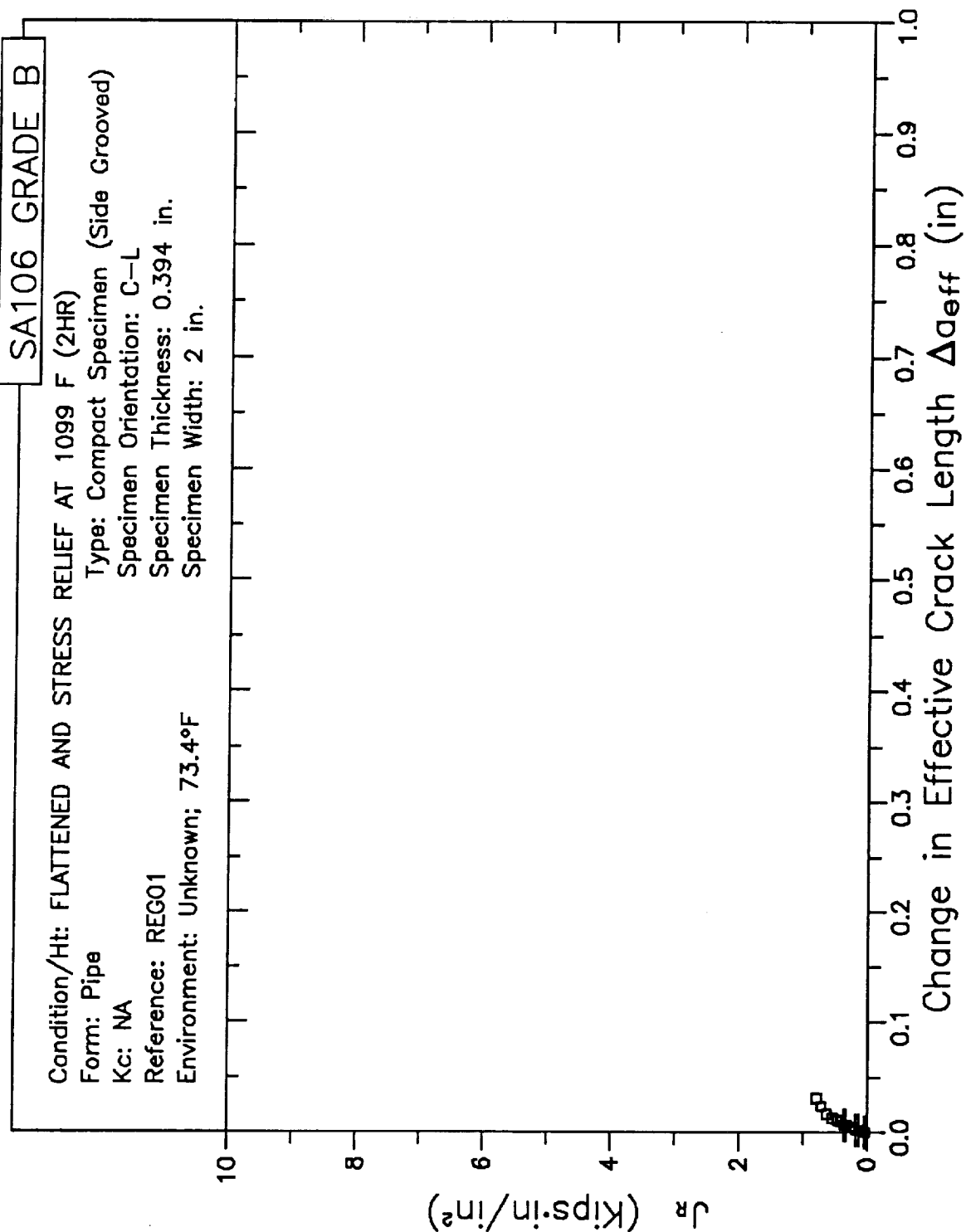
Specimen Thickness: 0.394 in.

Specimen Width: 2 in.



B3-446

# RESISTANCE CURVE



# RESISTANCE CURVE

SA106 GRADE B

Condition/Ht: FLATTENED AND STRESS RELIEF AT 1099 F (2HR)

Form: Pipe

Kc: NA

Reference: REG01

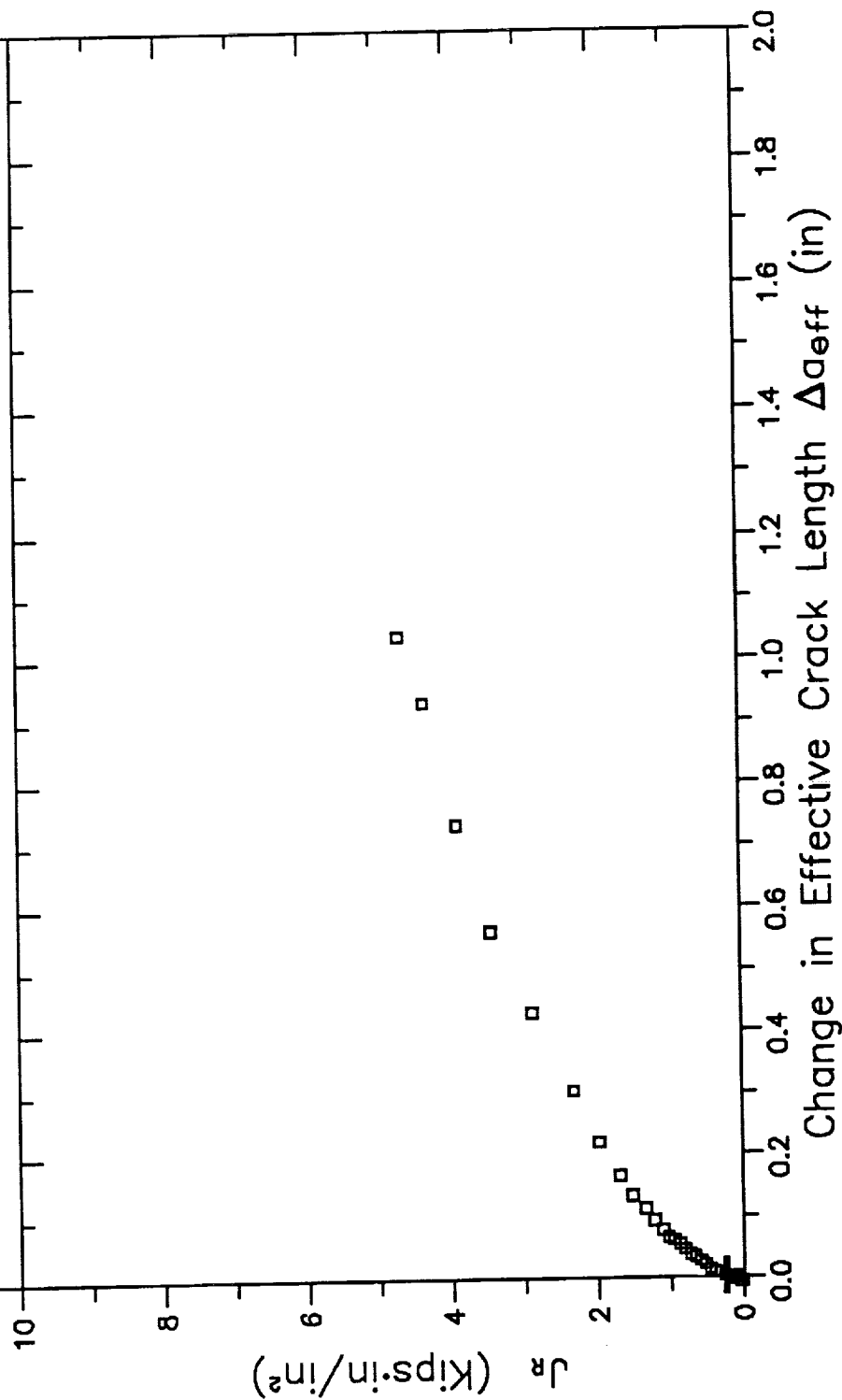
Environment: Unknown; 134.6°F

Type: Compact Specimen (Side Grooved)

Specimen Orientation: C-L

Specimen Thickness: 0.394 in.

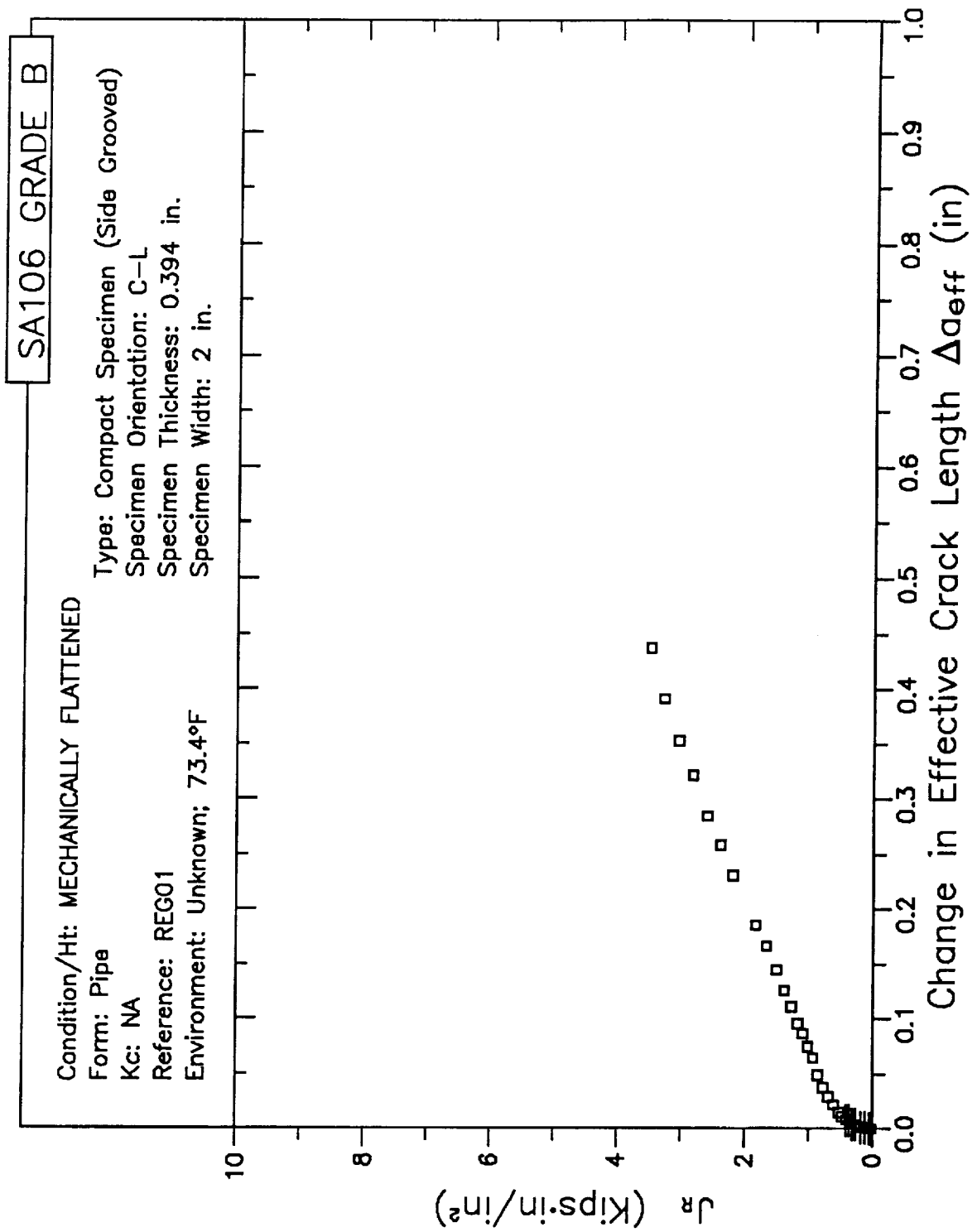
Specimen Width: 4 in.



B3-448



# RESISTANCE CURVE



# RESISTANCE CURVE

SA106 GRADE B

Condition/Ht: MECHANICALLY FLATTENED

Form: Pipe

Kc: NA

Reference: REG01

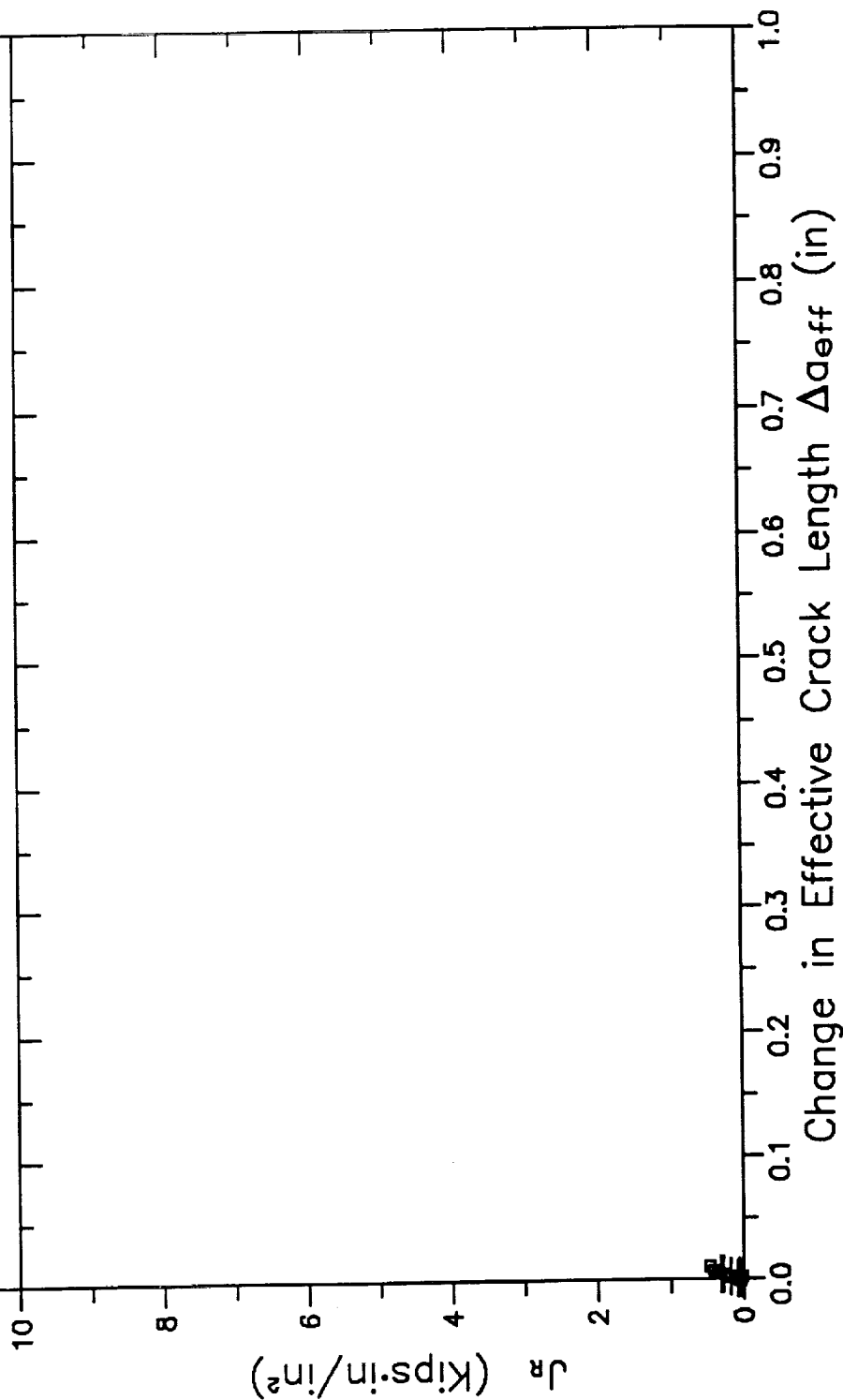
Environment: Unknown; 73.4°F

Type: Compact Specimen (Side Grooved)

Specimen Orientation: C-L

Specimen Thickness: 0.394 in.

Specimen Width: 2 in.



B3-450

# RESISTANCE CURVE

SA106 GRADE B

Condition/Ht: MECHANICALLY FLATTENED

Form: Pipe

Kc: NA

Reference: REG01

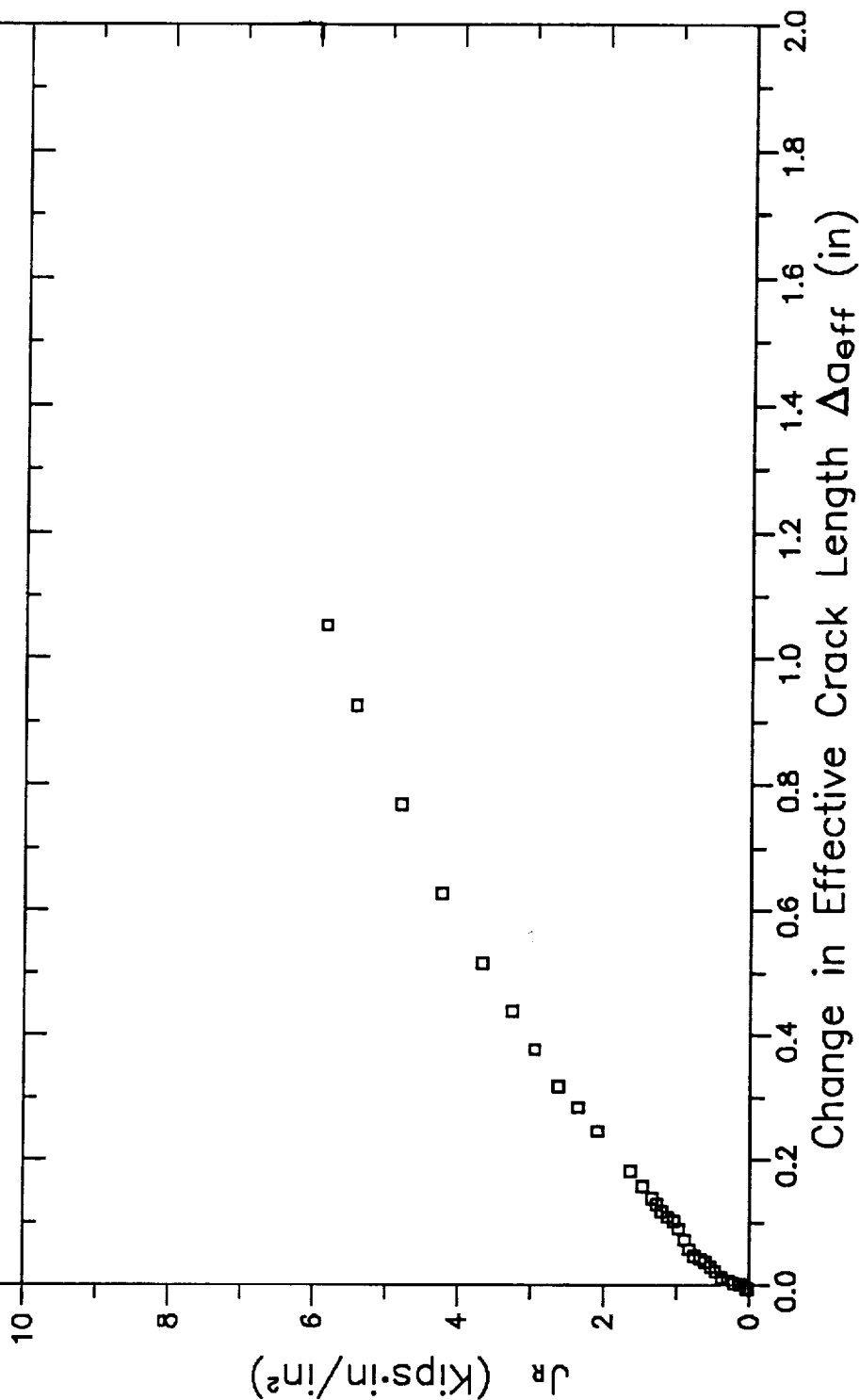
Environment: Unknown; 134.6°F

Type: Compact Specimen (Side Grooved)

Specimen Orientation: C-L

Specimen Thickness: 0.394 in.

Specimen Width: 4 in.

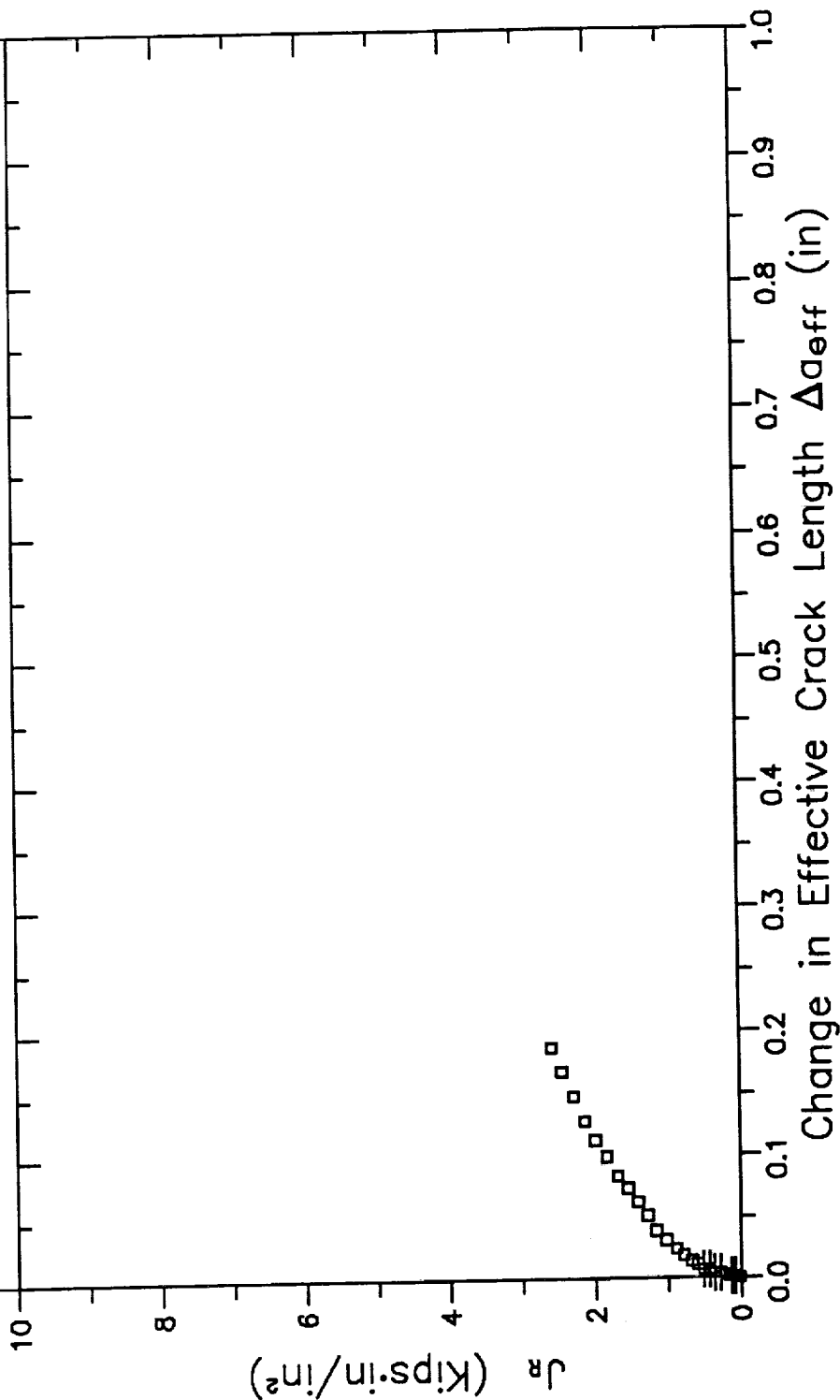


# RESISTANCE CURVE

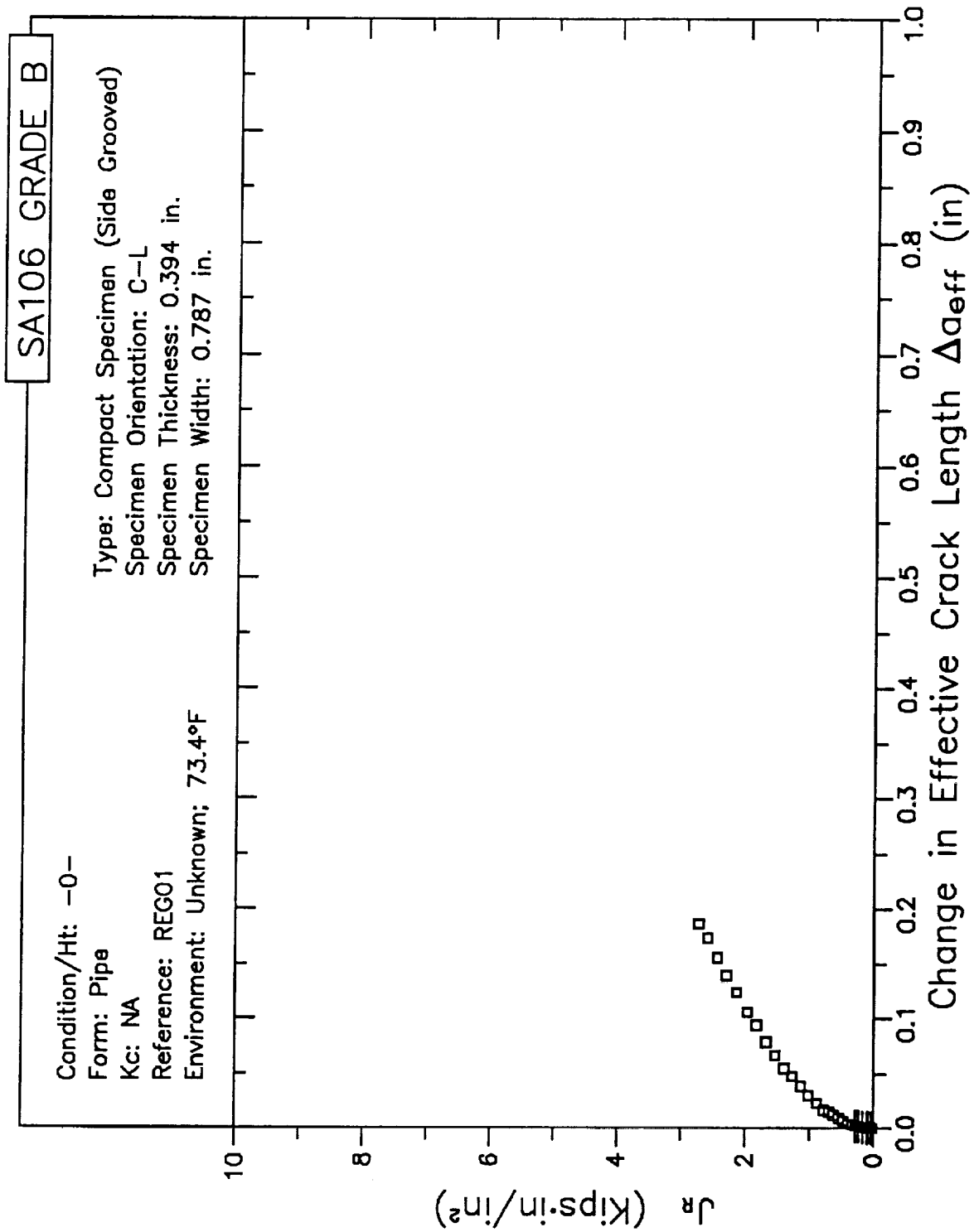
SA106 GRADE B

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG01  
Environment: Unknown; 73.4°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: C-L  
Specimen Thickness: 0.394 in.  
Specimen Width: 0.787 in.



# RESISTANCE CURVE

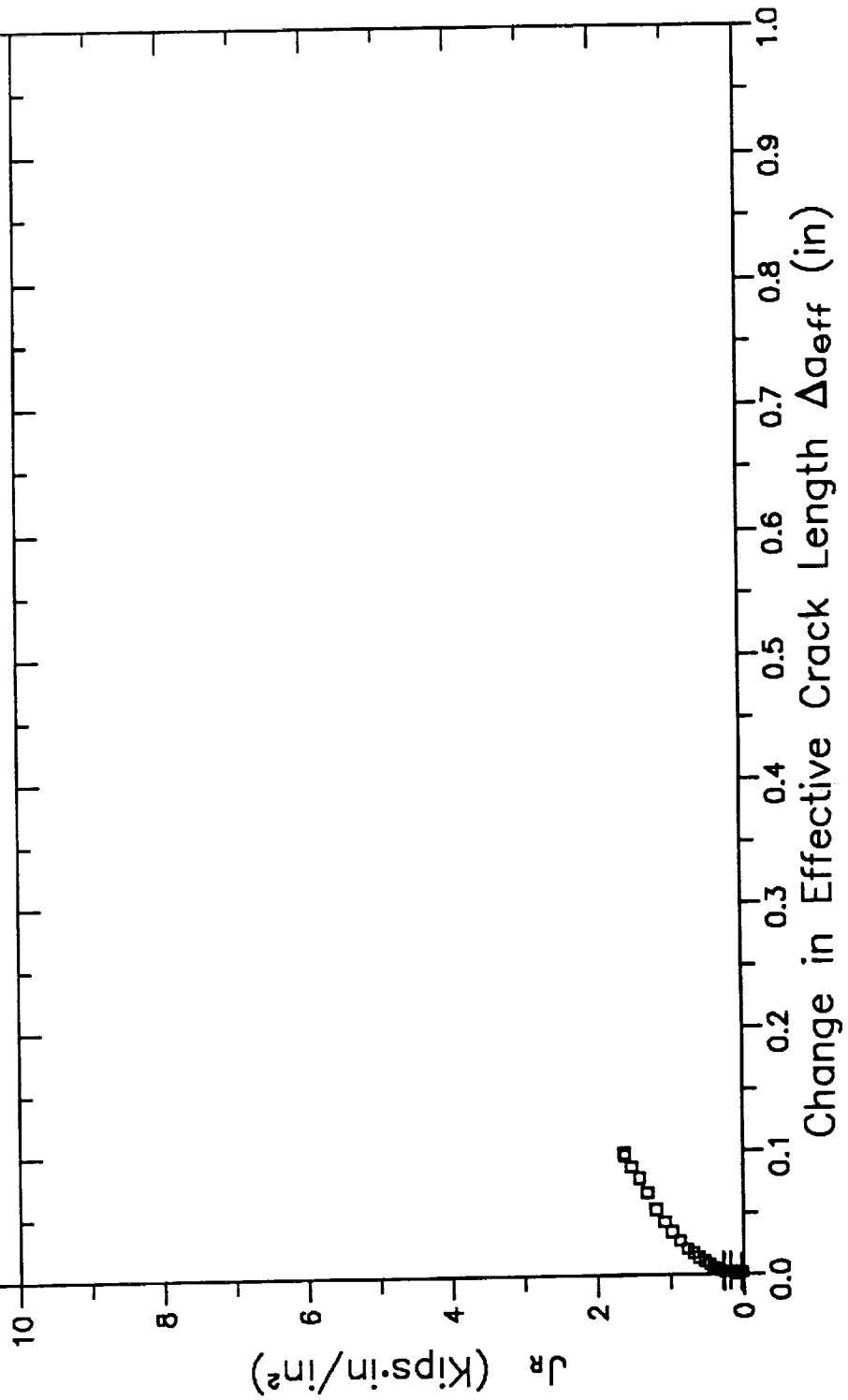


# RESISTANCE CURVE

SA106 GRADE B

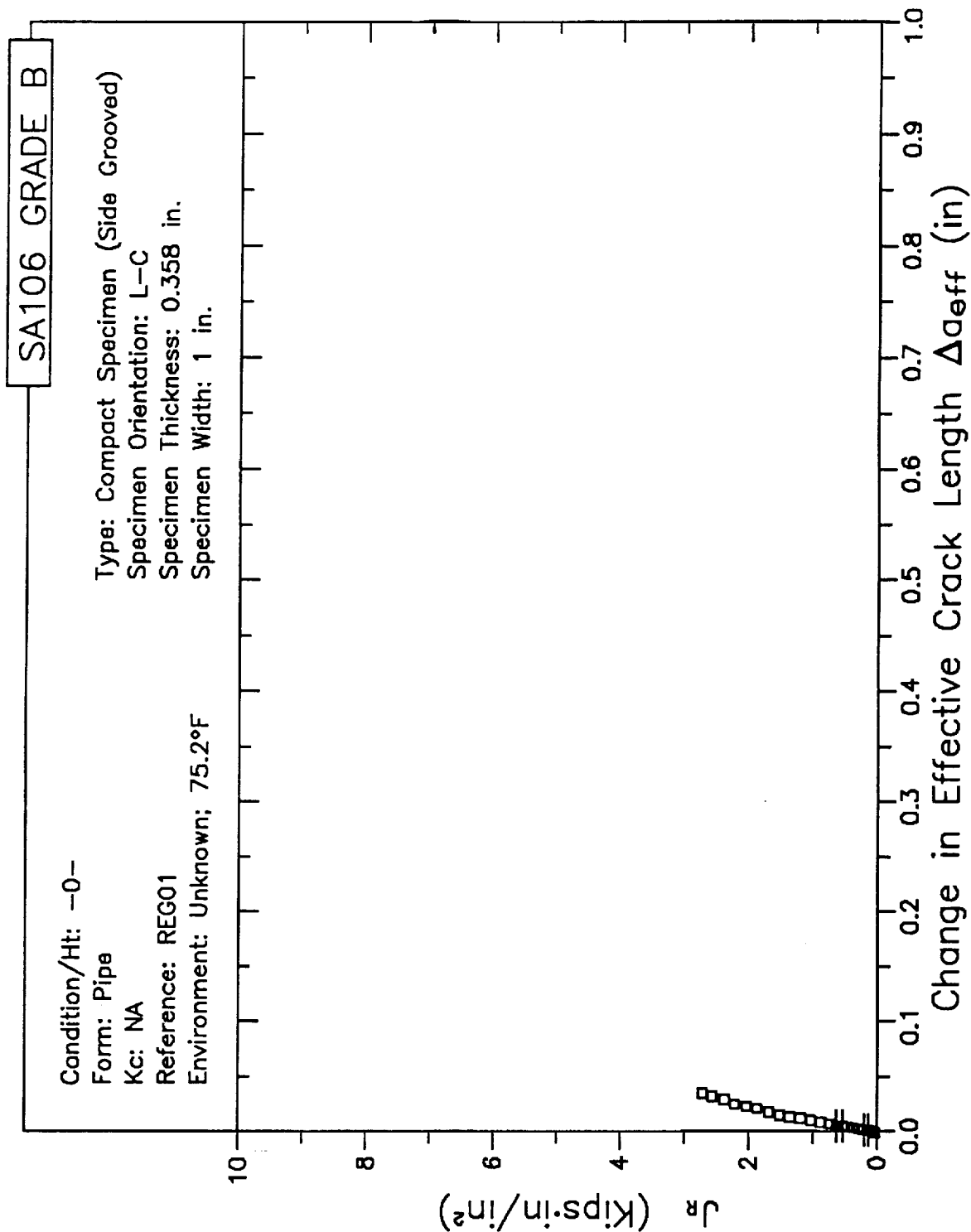
Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG01  
Environment: Unknown; 73.4°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: C-L  
Specimen Thickness: 0.394 in.  
Specimen Width: 0.787 in.



B3-454

# RESISTANCE CURVE

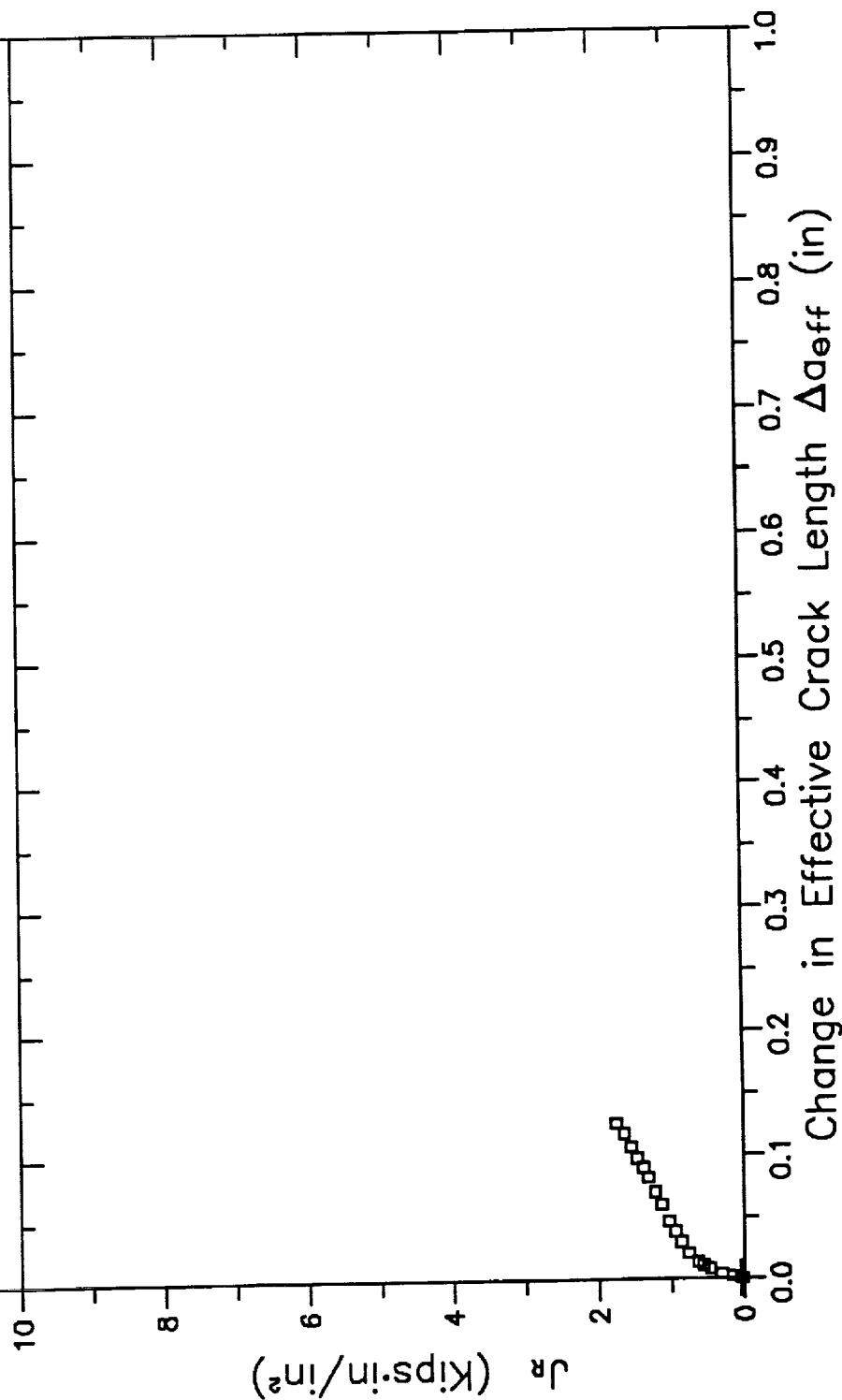


# RESISTANCE CURVE

SA106 GRADE B

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG01  
Environment: Unknown; 75.2°F

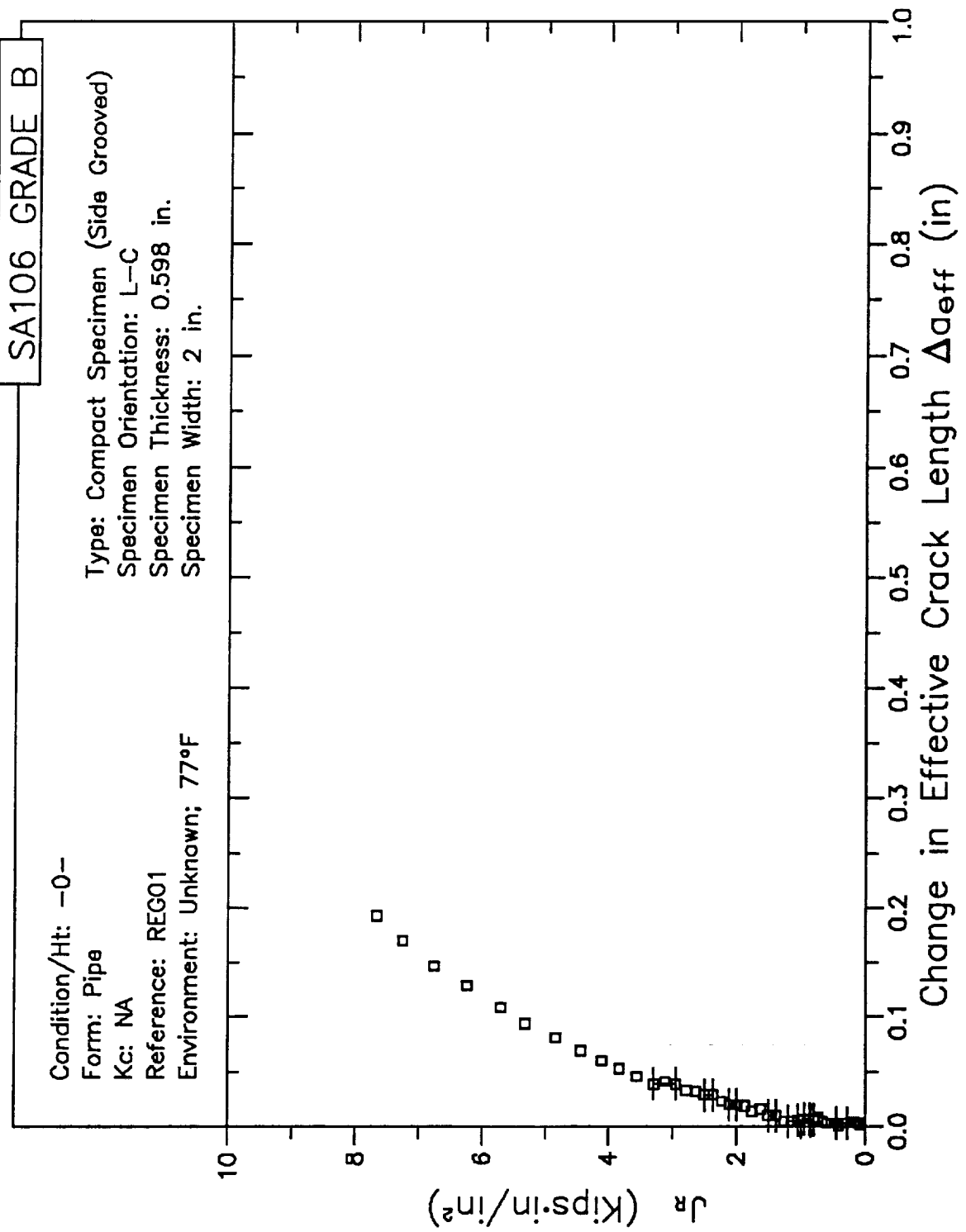
Type: Compact Specimen (Side Grooved)  
Specimen Orientation: C-L  
Specimen Thickness: 0.358 in.  
Specimen Width: 1 in.



B3-456



# RESISTANCE CURVE



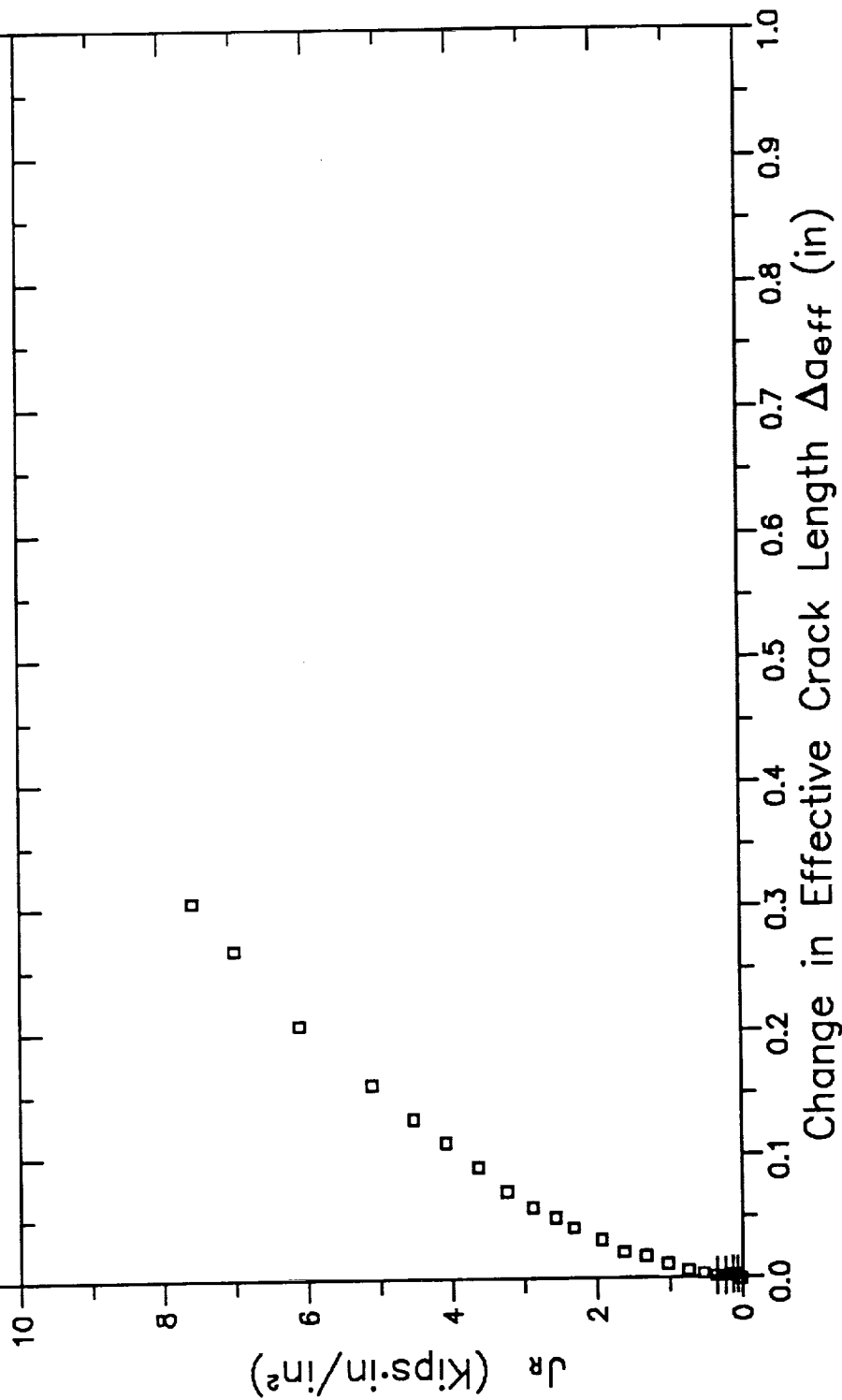
B3-457

# RESISTANCE CURVE

SA106 GRADE B

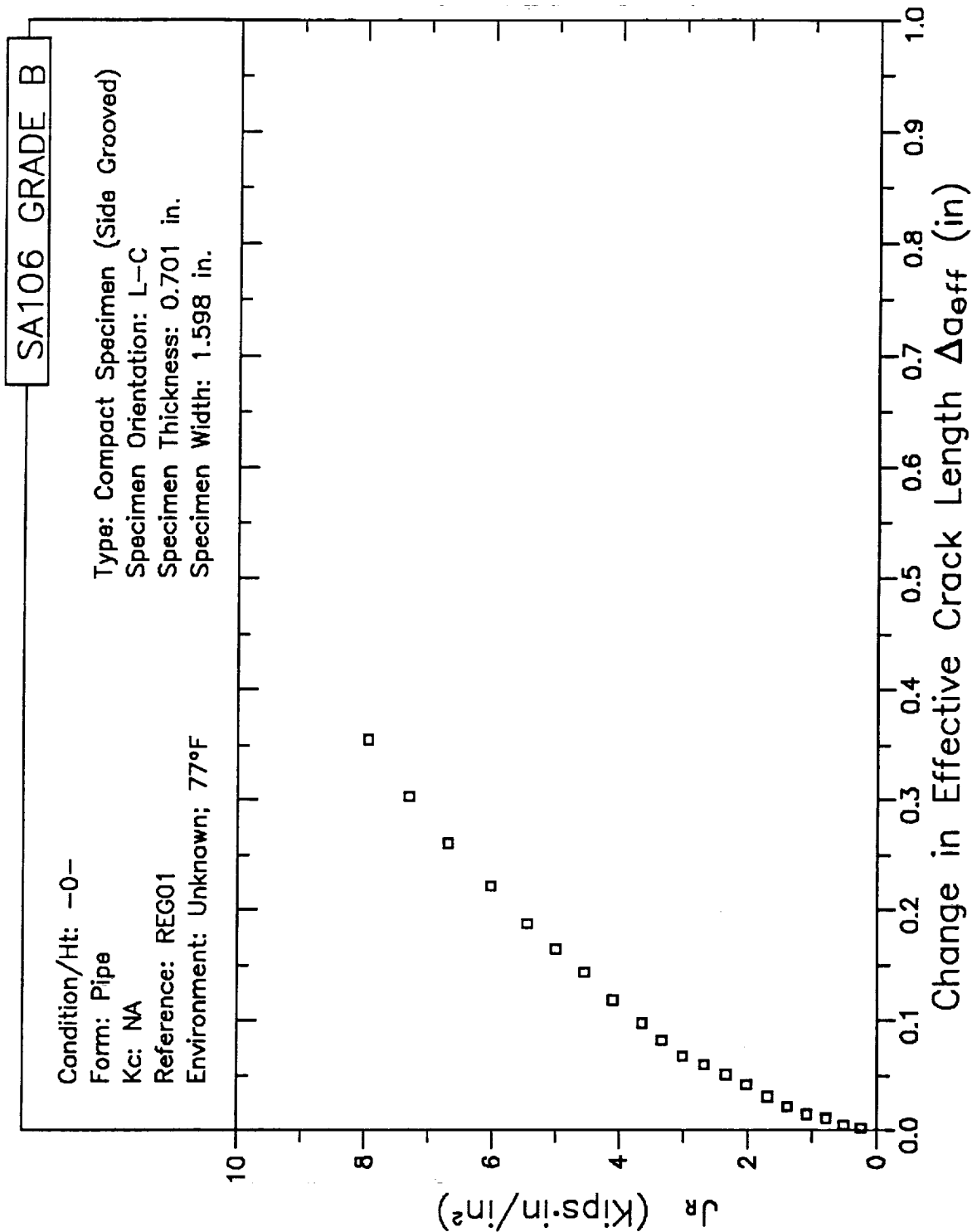
Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG01  
Environment: Unknown; 77°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 0.701 in.  
Specimen Width: 1.598 in.



B3-458

# RESISTANCE CURVE

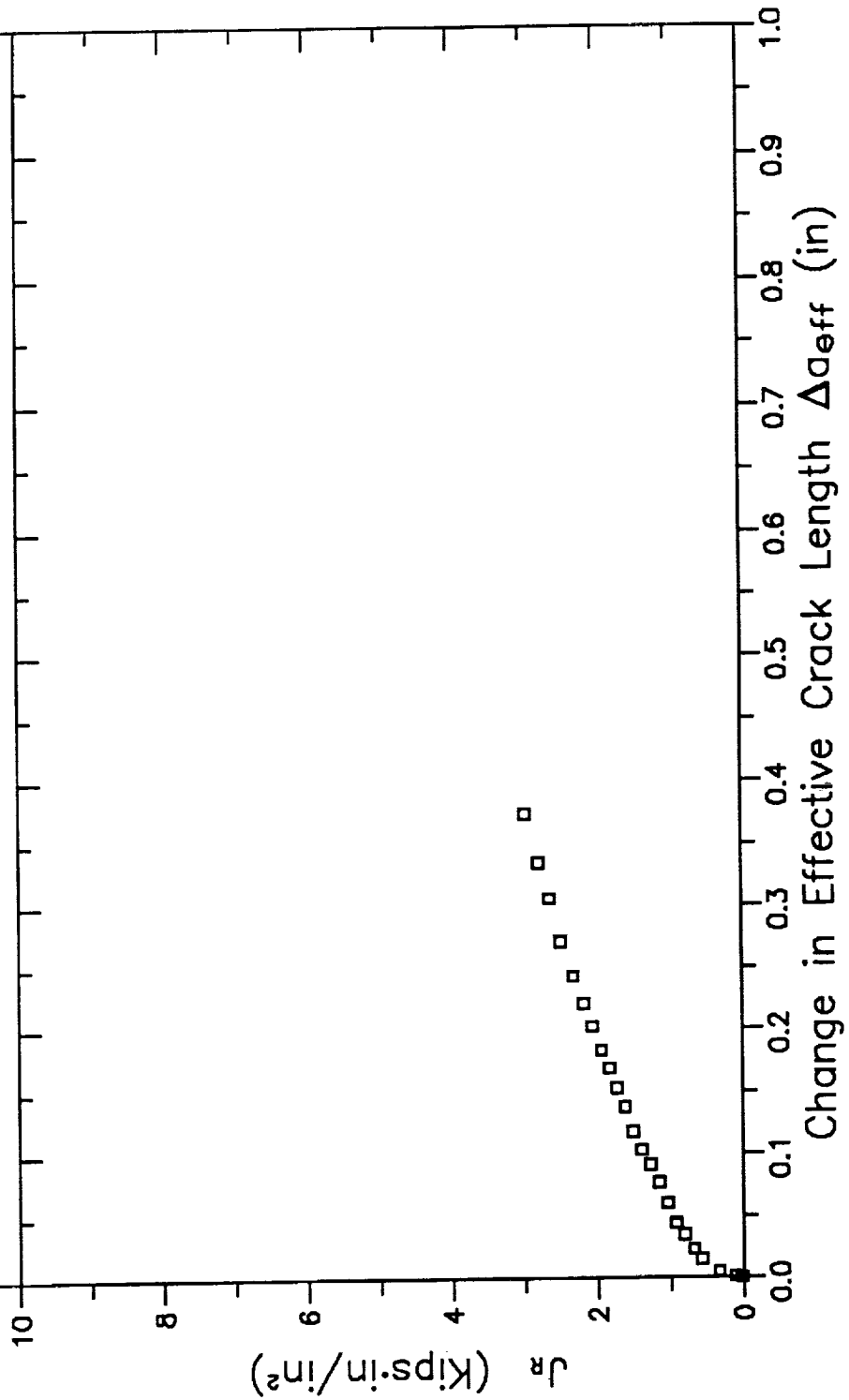


# RESISTANCE CURVE

SA106 GRADE B

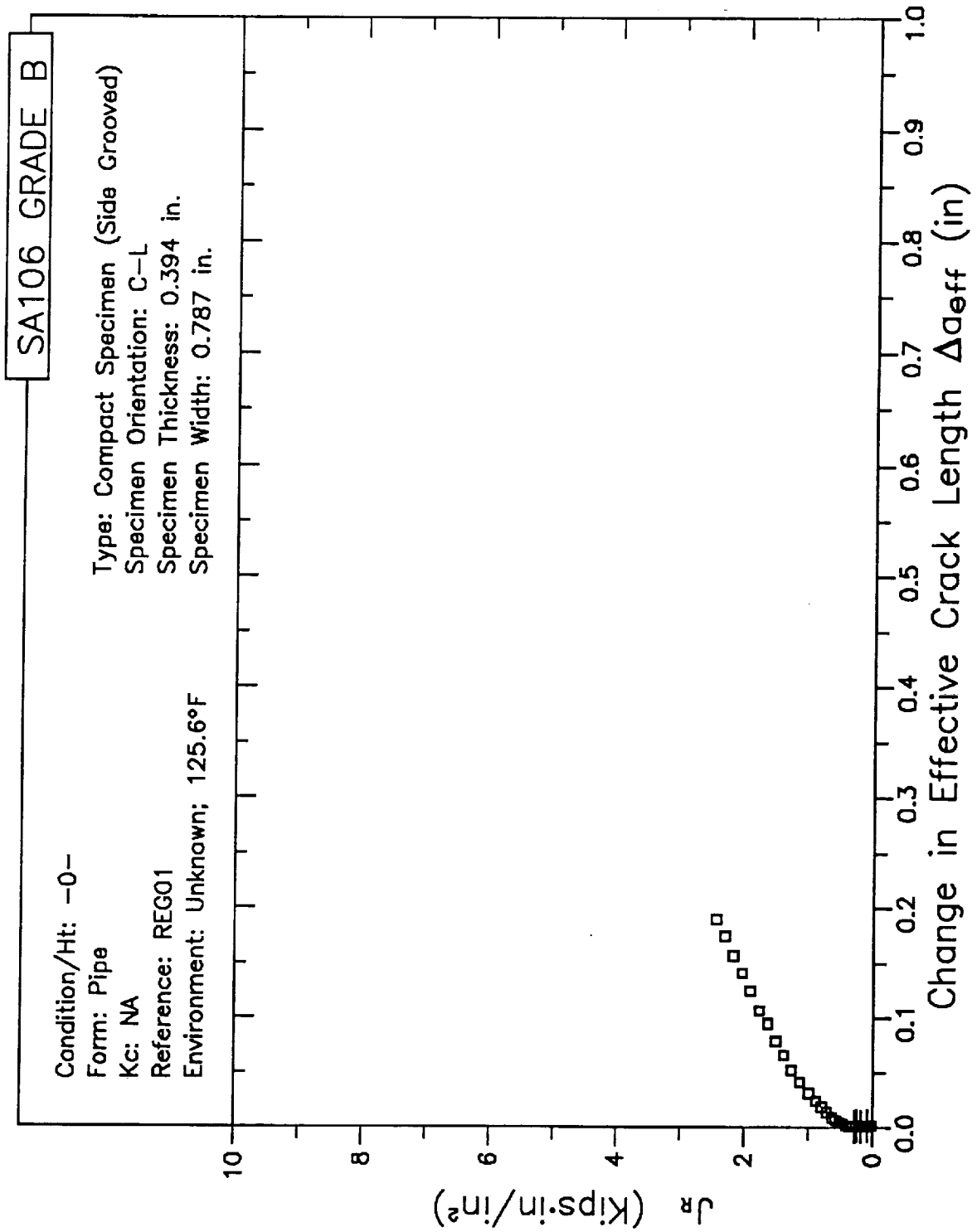
Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG01  
Environment: Unknown; 77°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: C-L  
Specimen Thickness: 0.701 in.  
Specimen Width: 1.598 in.



B3-460

# RESISTANCE CURVE

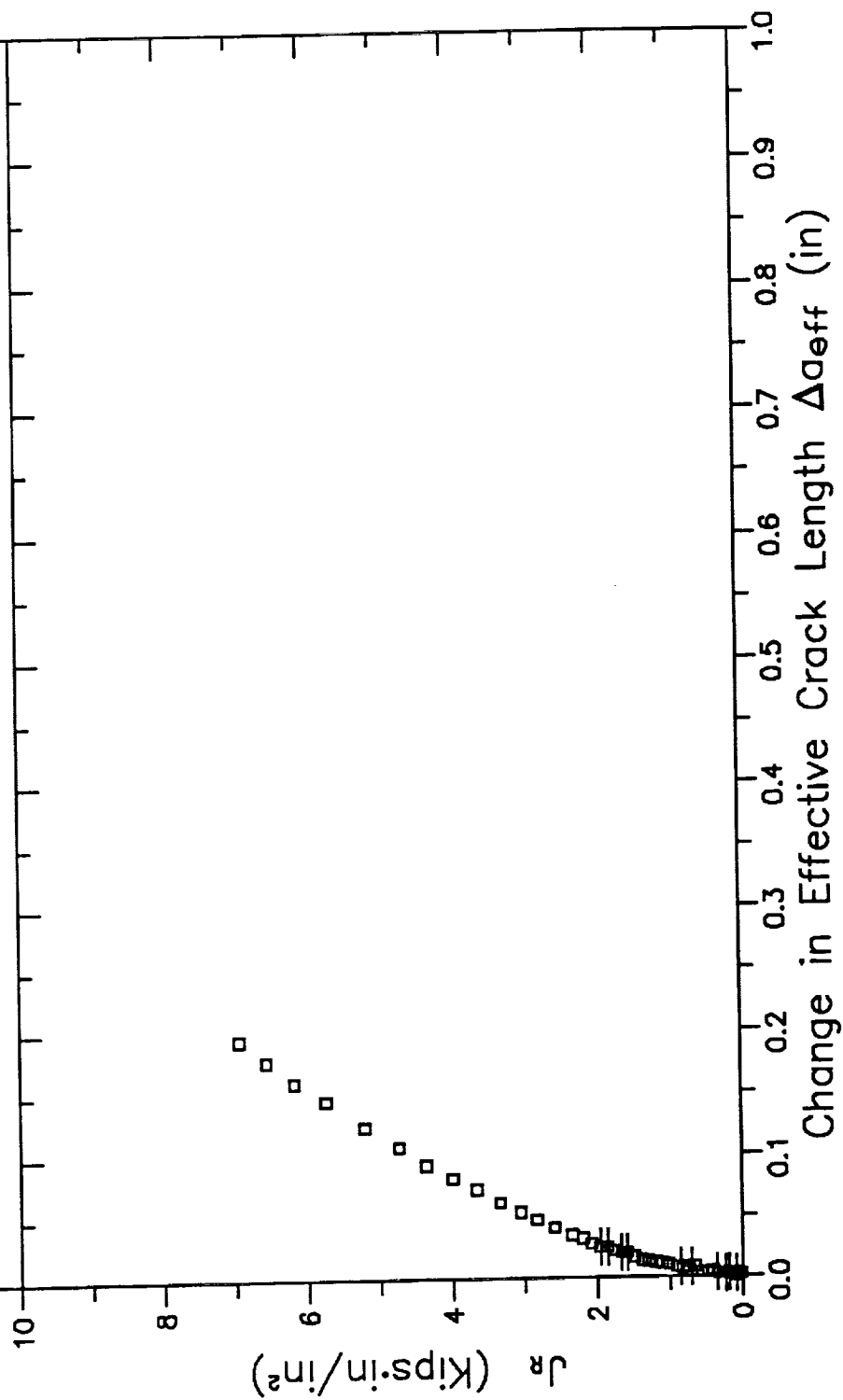


# RESISTANCE CURVE

SA106 GRADE B

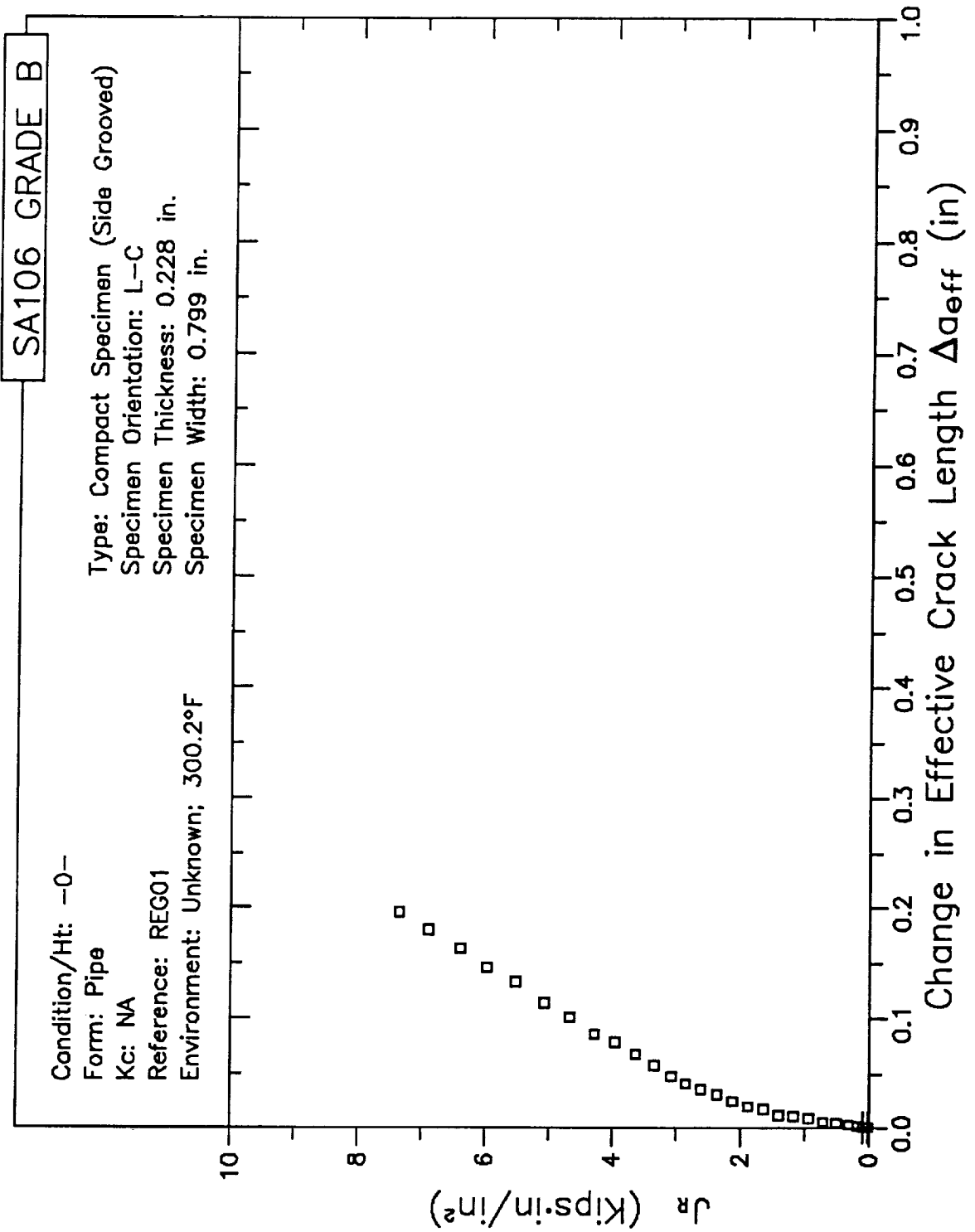
Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG01  
Environment: Unknown; 300.2°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 0.228 in.  
Specimen Width: 0.799 in.



B3-462

# RESISTANCE CURVE

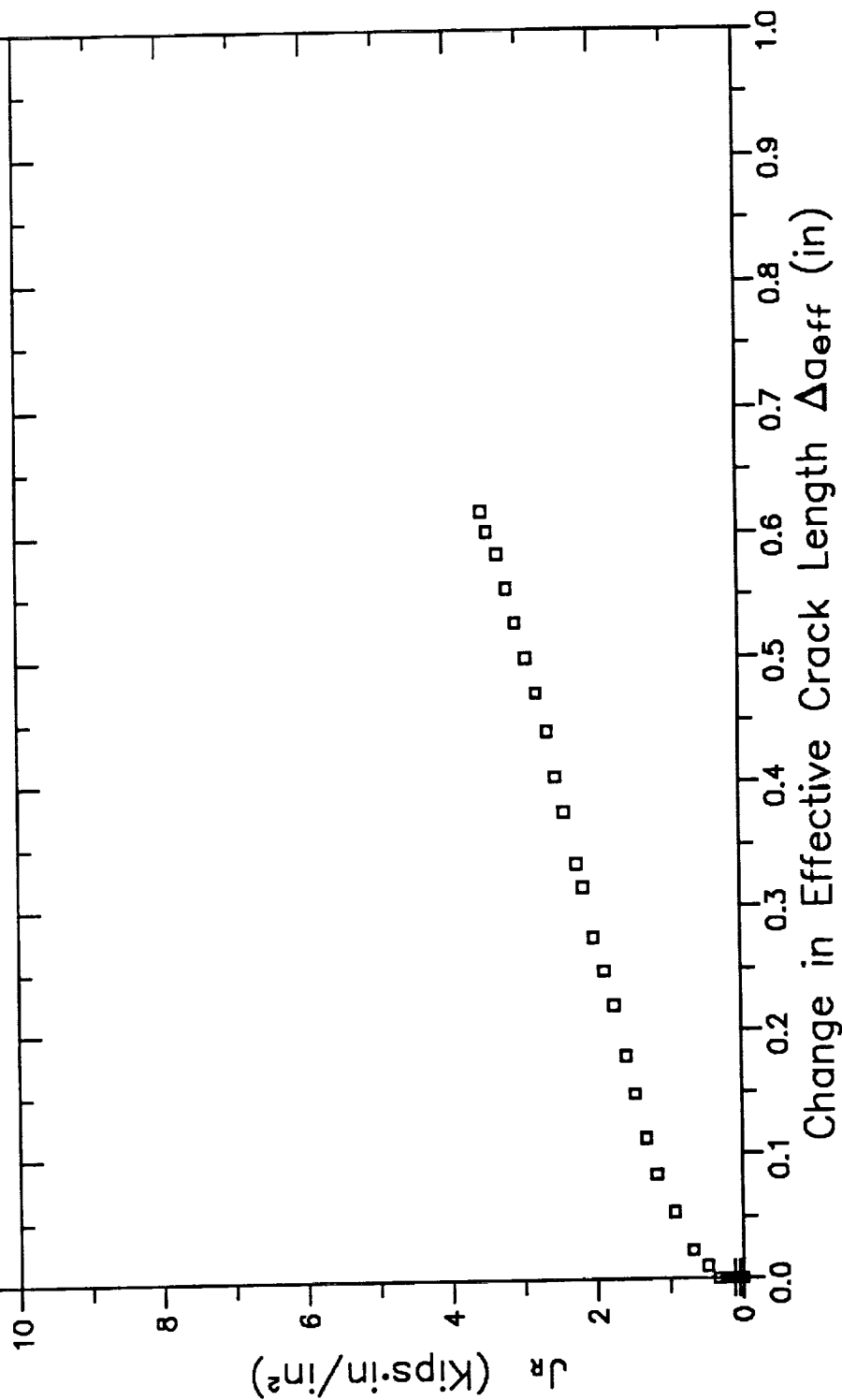


# RESISTANCE CURVE

SA106 GRADE B

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG03  
Environment: Unknown; 300.2°F

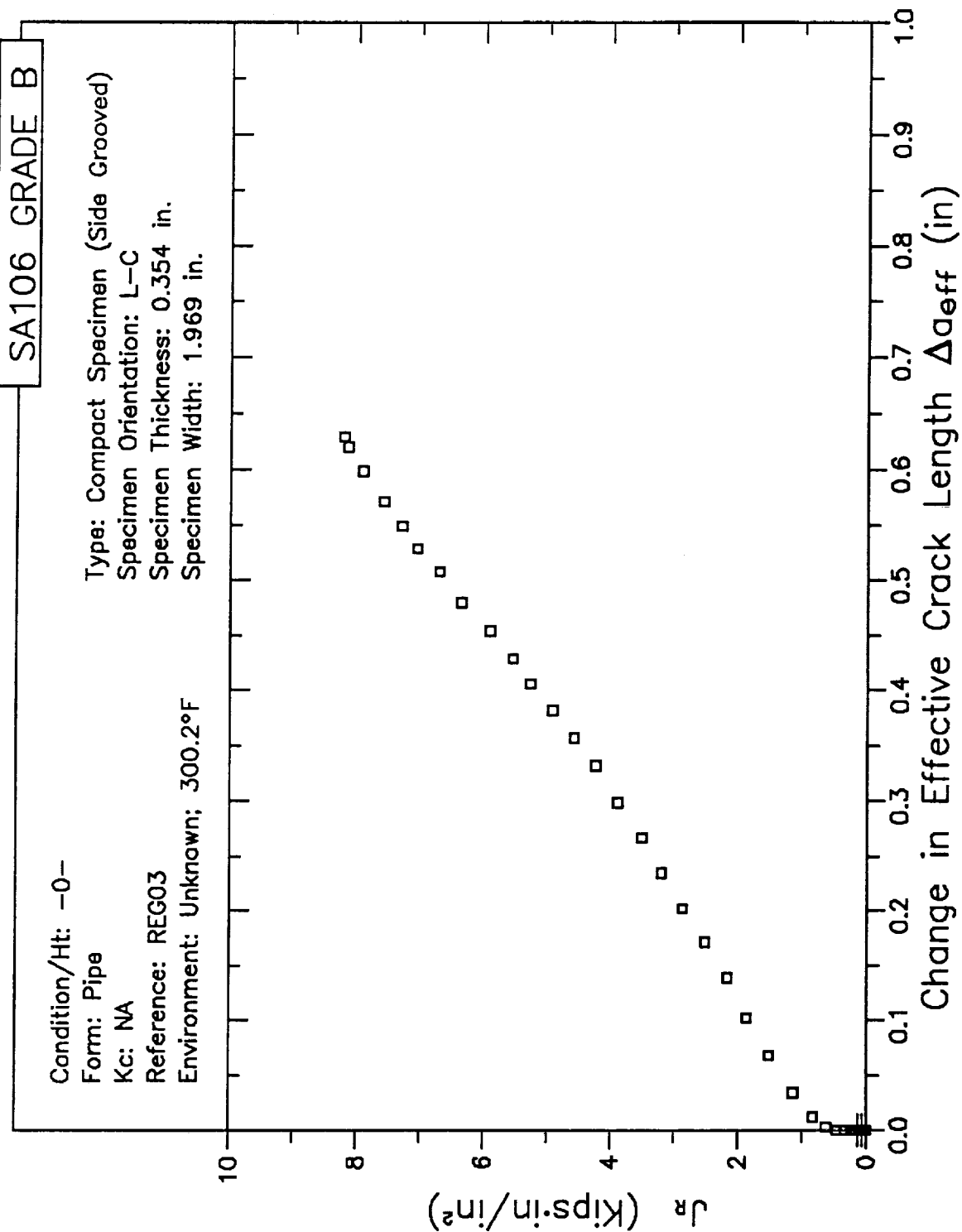
Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 0.354 in.  
Specimen Width: 1.969 in.



B3-464



# RESISTANCE CURVE

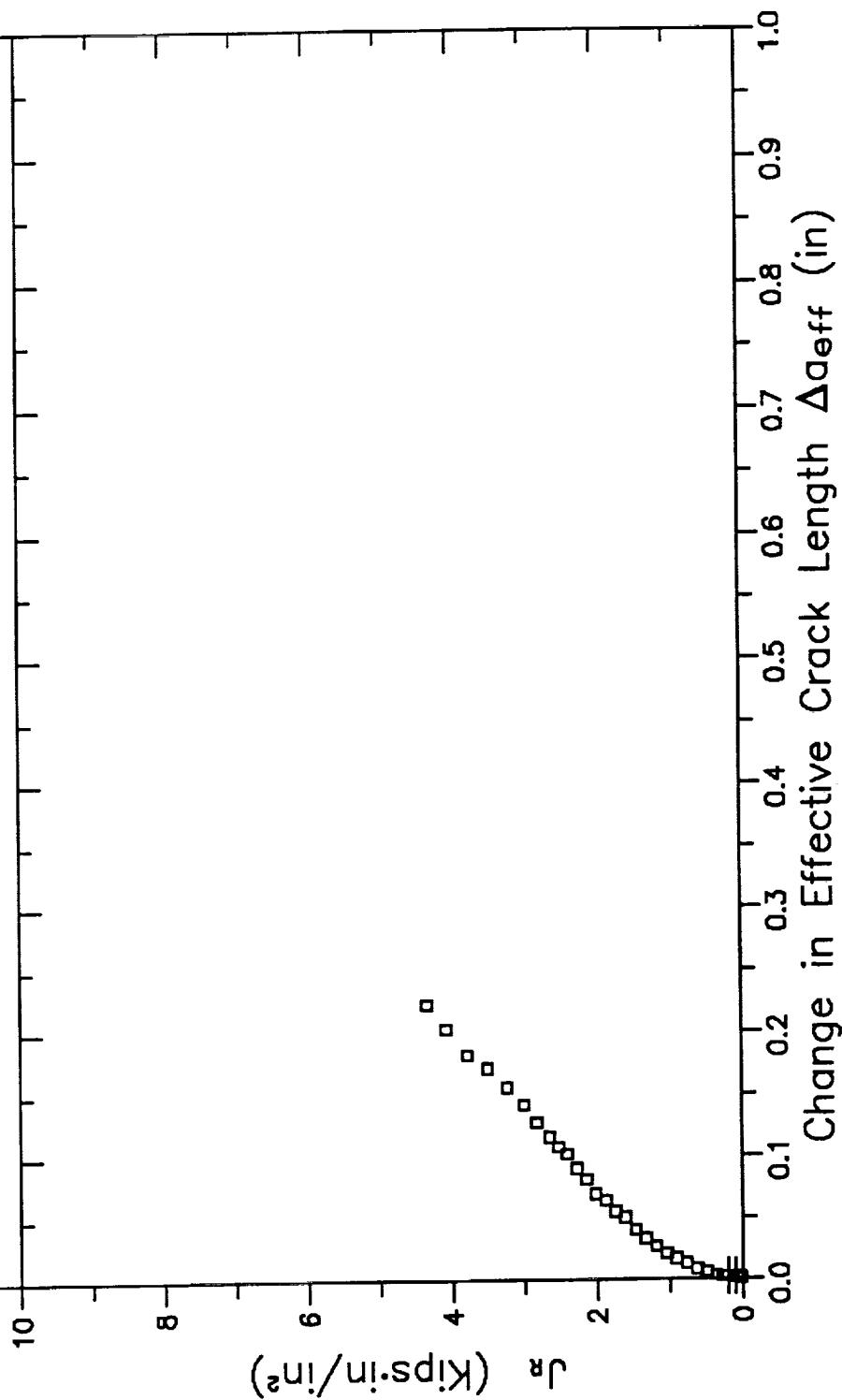


# RESISTANCE CURVE

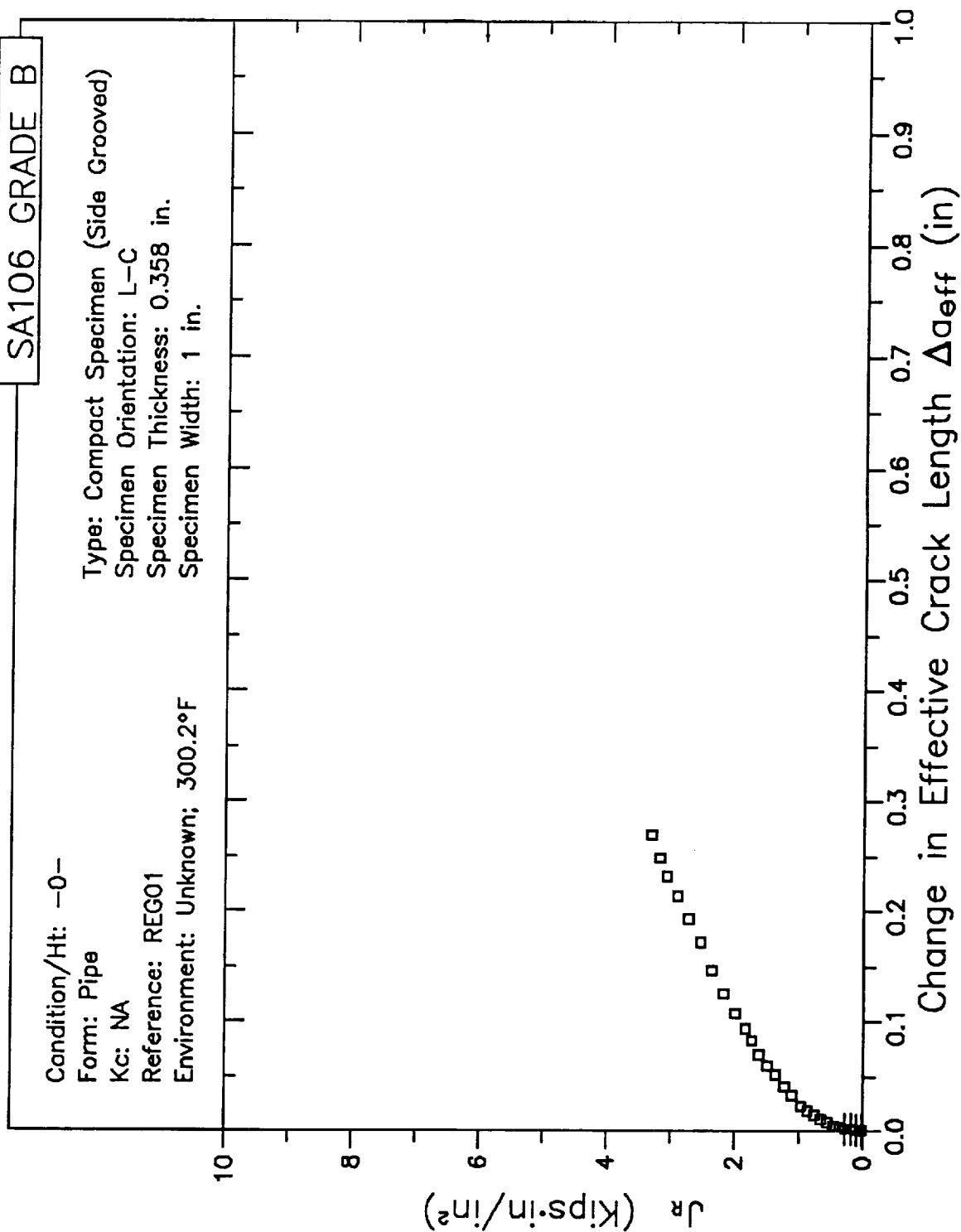
SA106 GRADE B

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG01  
Environment: Unknown; 300.2°F

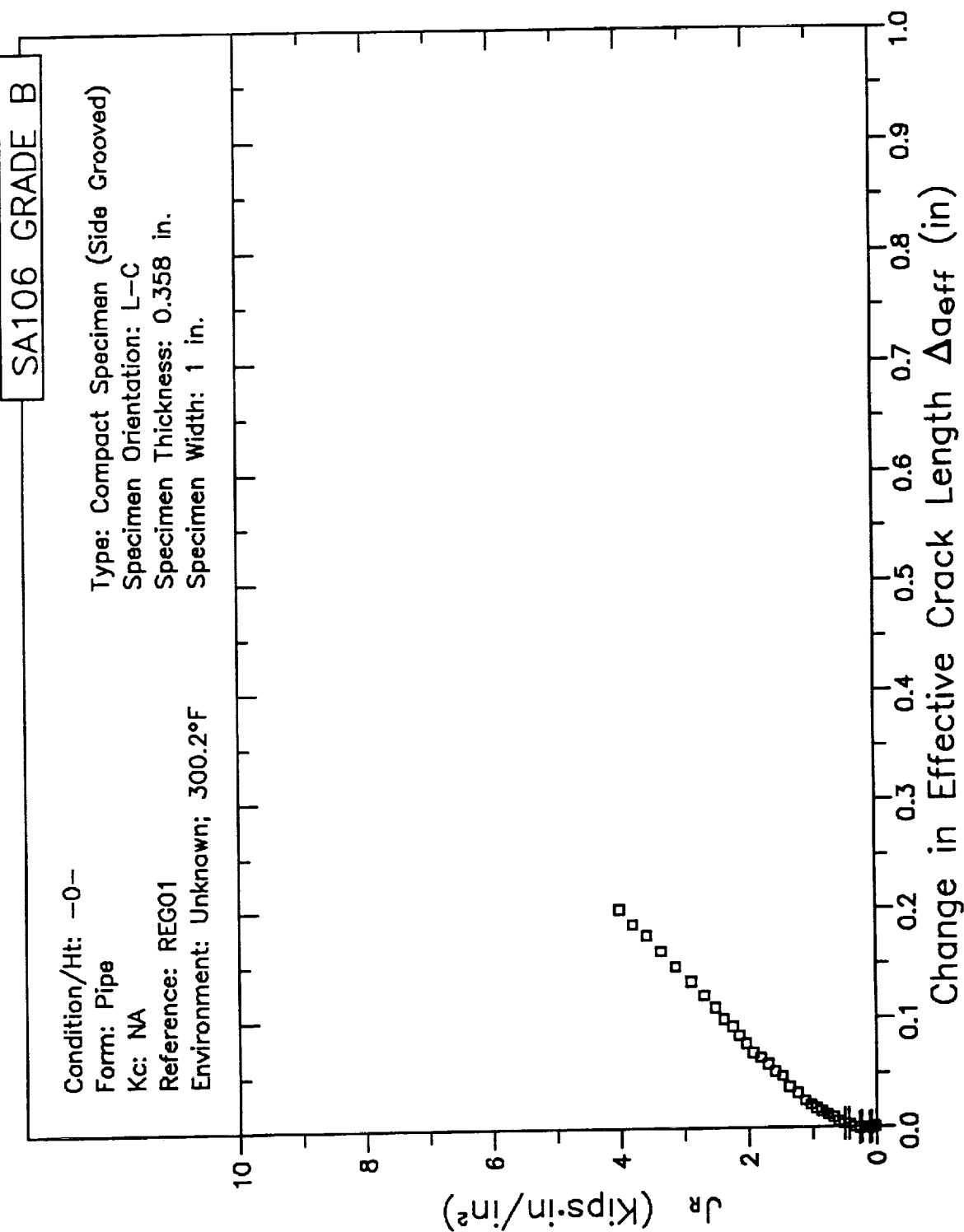
Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 0.358 in.  
Specimen Width: 1 in.



# RESISTANCE CURVE

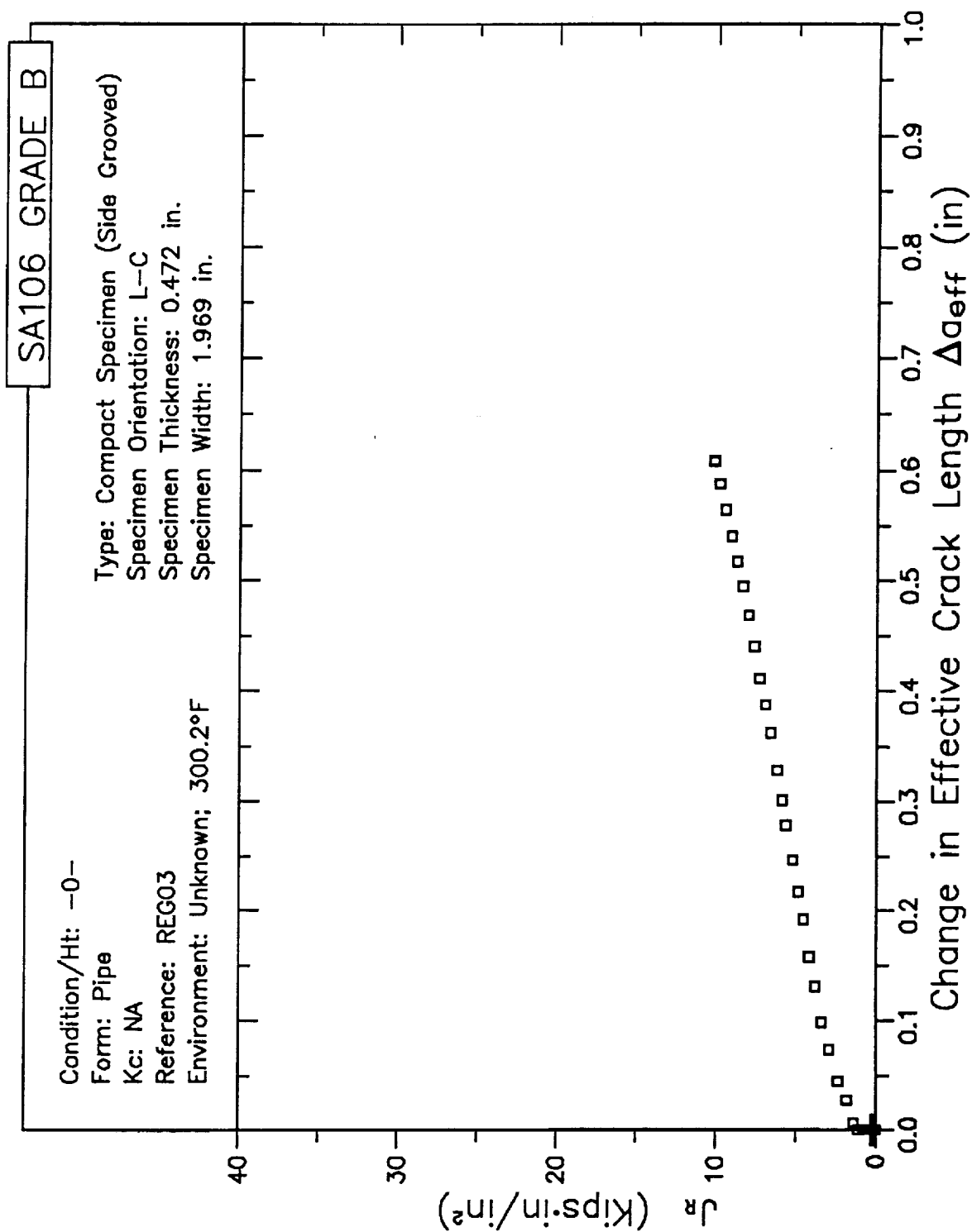


# RESISTANCE CURVE



B3-468

# RESISTANCE CURVE

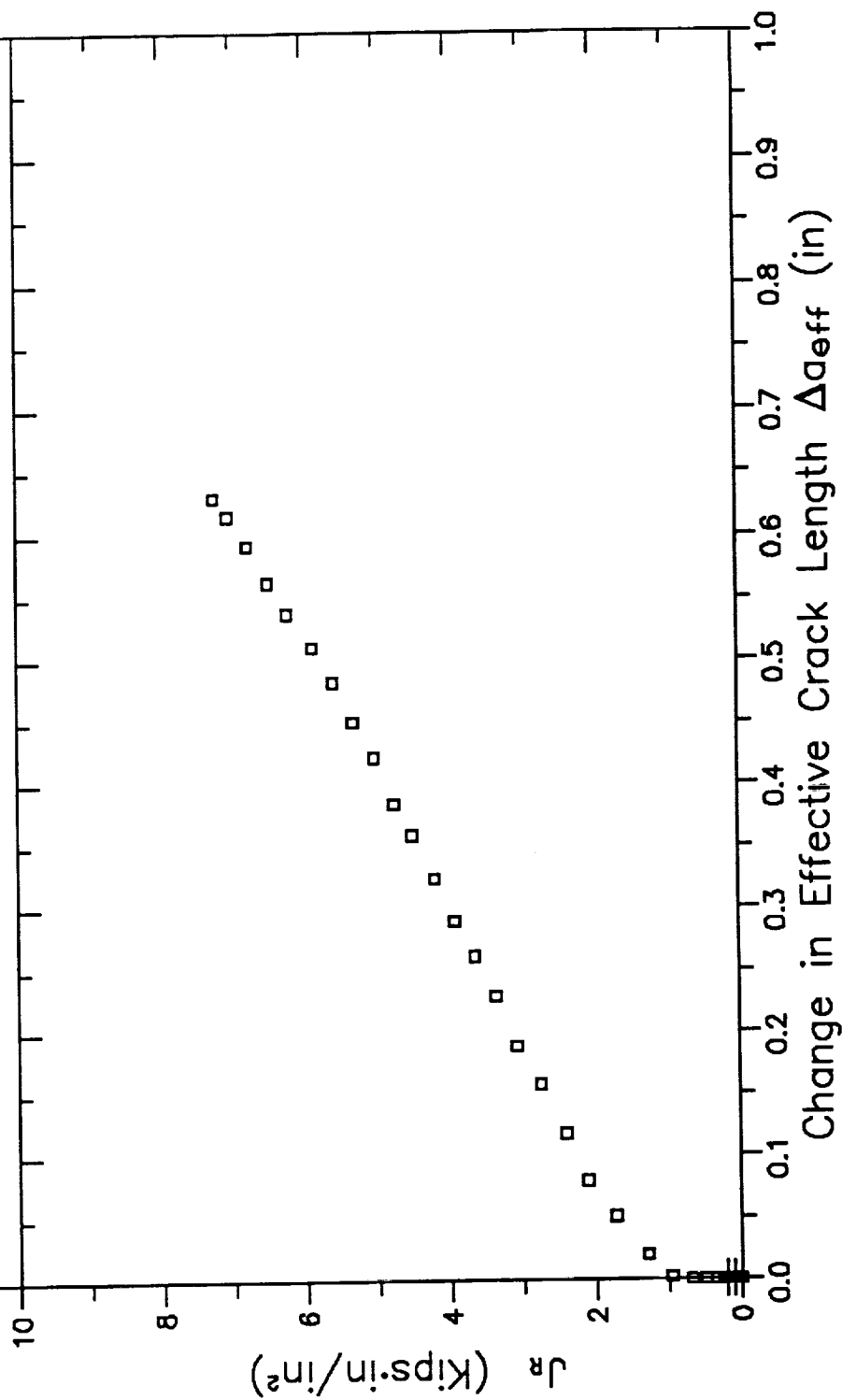


# RESISTANCE CURVE

SA106 GRADE B

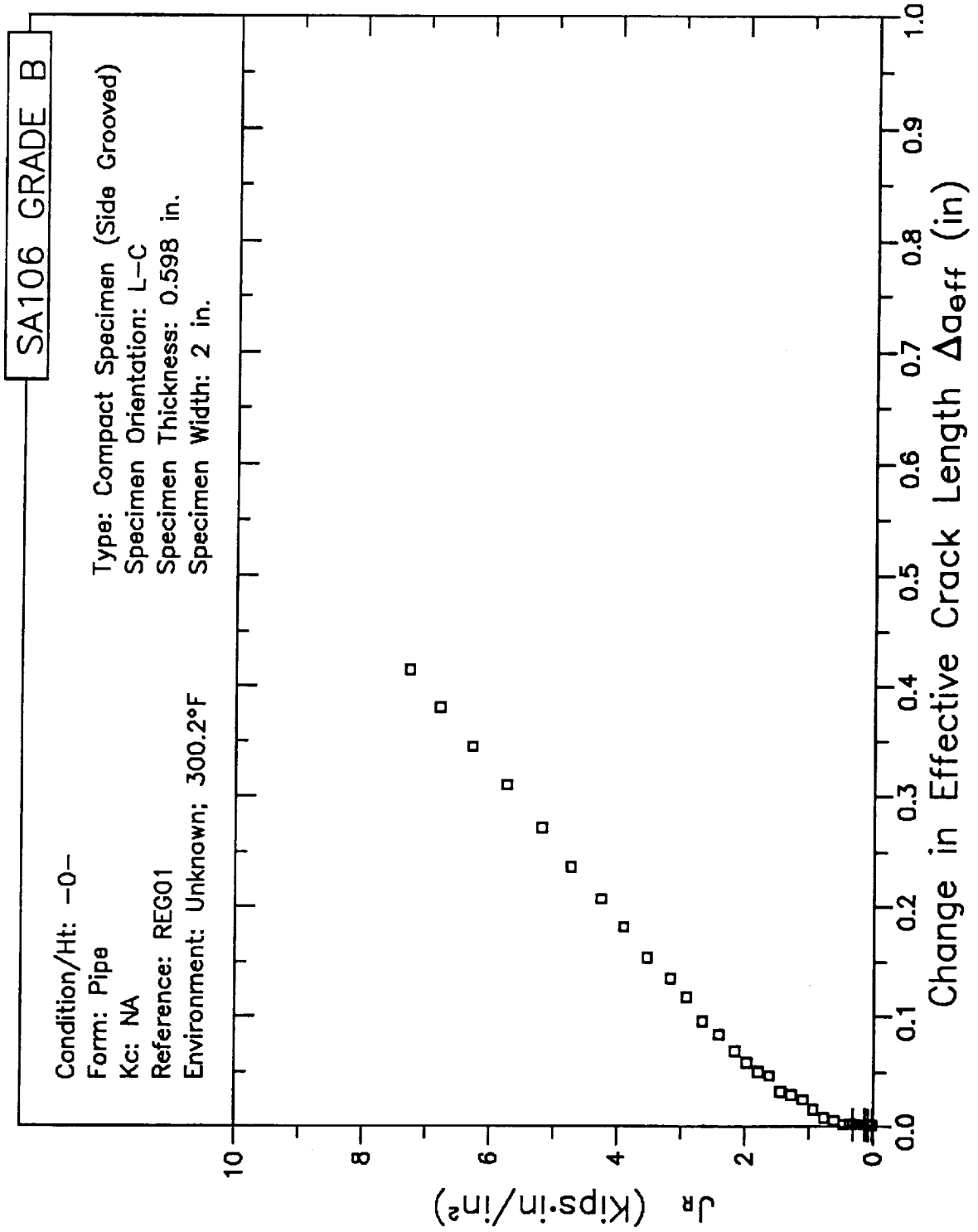
Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG03  
Environment: Unknown; 300.2°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 0.472 in.  
Specimen Width: 1.969 in.



B3-470

# RESISTANCE CURVE

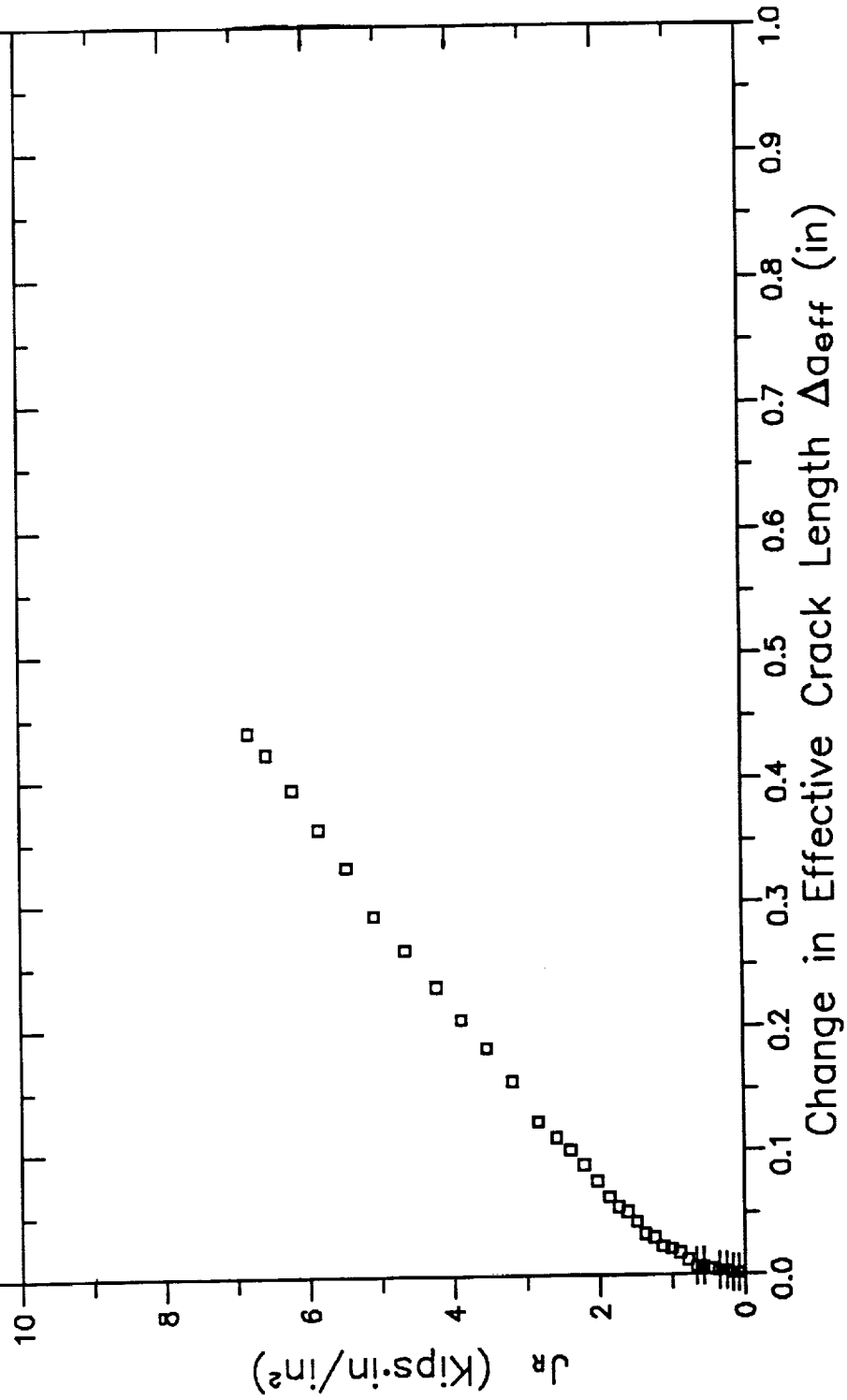


# RESISTANCE CURVE

SA106 GRADE B

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG01  
Environment: Unknown; 300.2°F

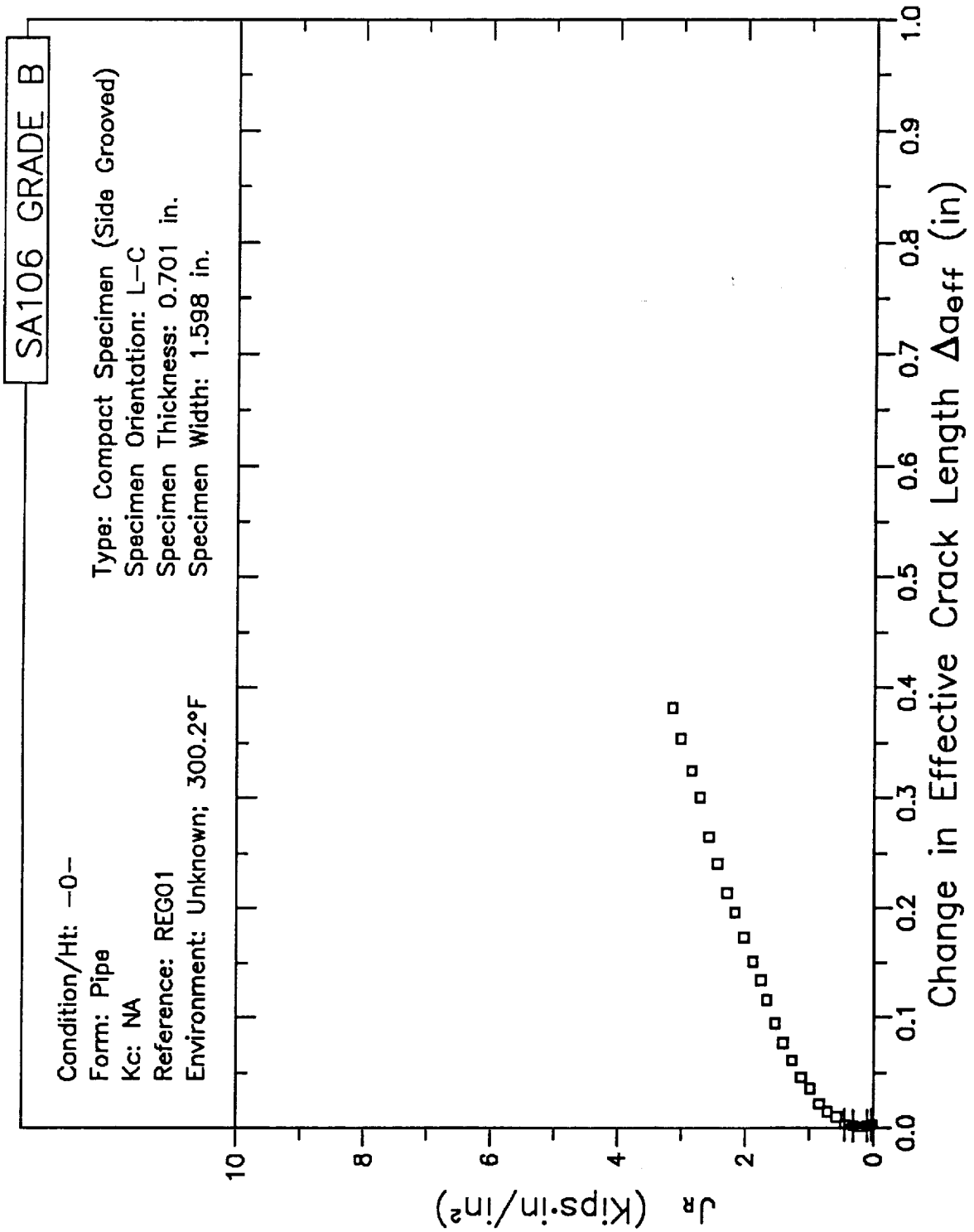
Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 0.598 in.  
Specimen Width: 2 in.



B3-472



# RESISTANCE CURVE

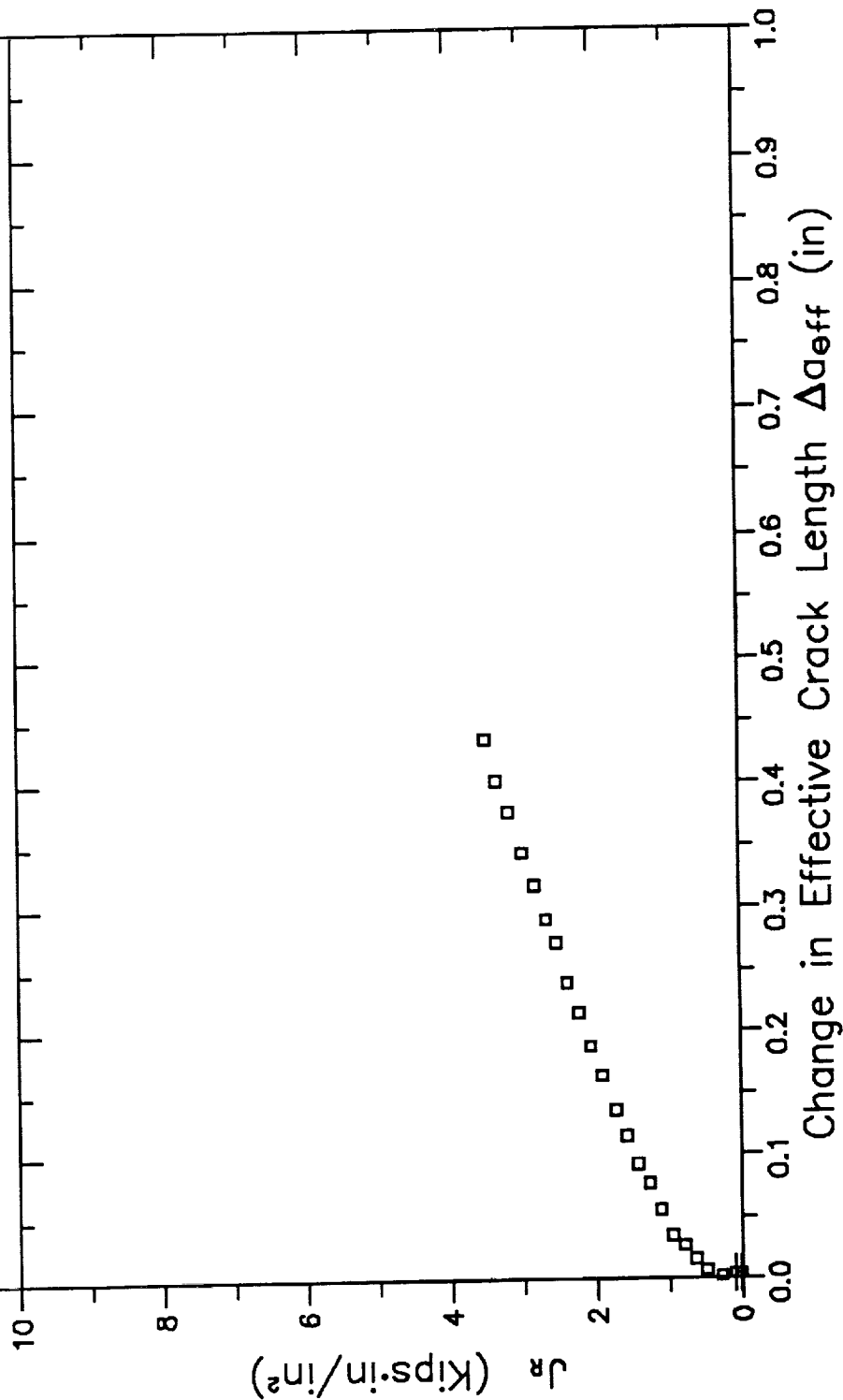


# RESISTANCE CURVE

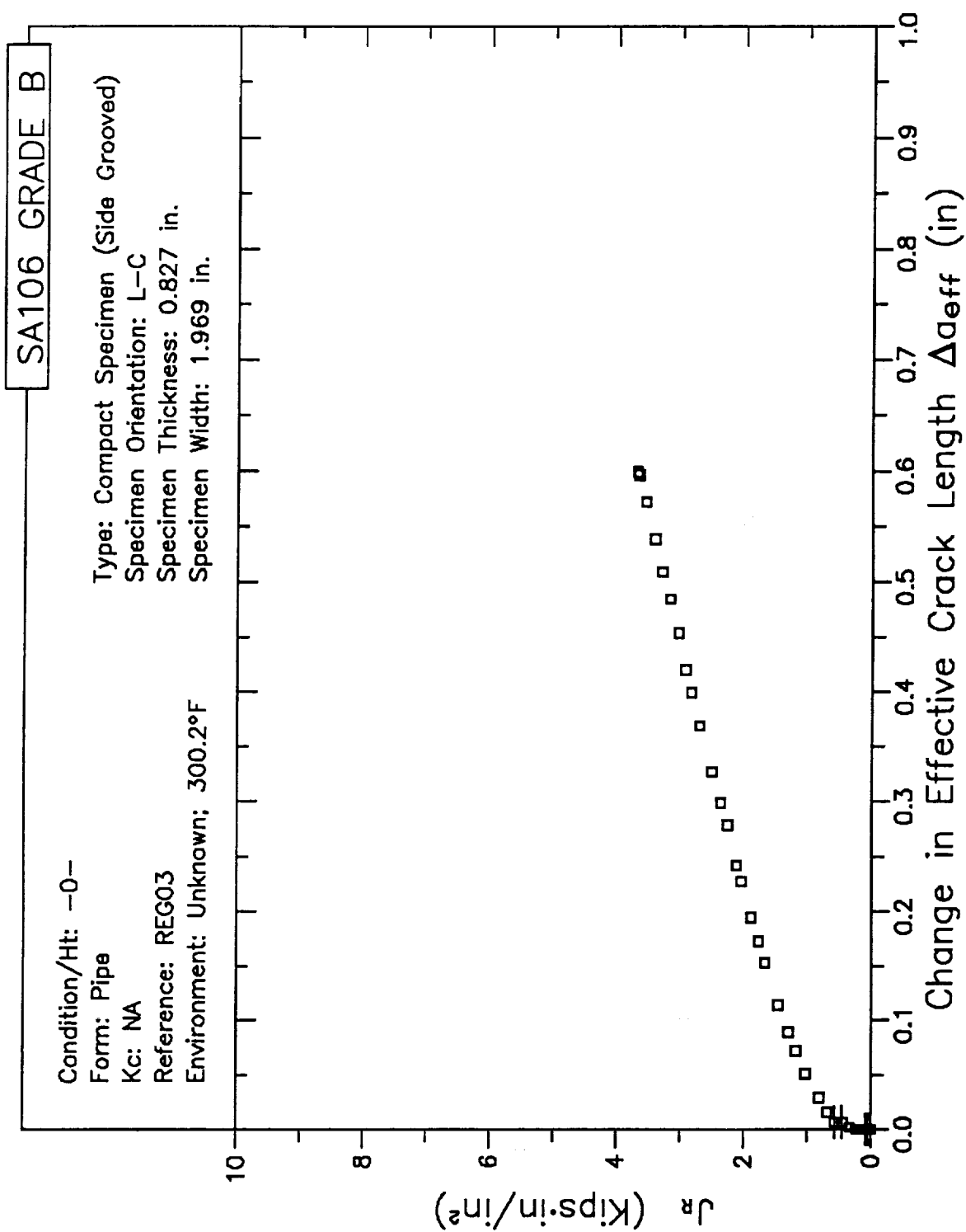
SA106 GRADE B

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG01  
Environment: Unknown; 300.2°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 0.701 in.  
Specimen Width: 1.598 in.



# RESISTANCE CURVE

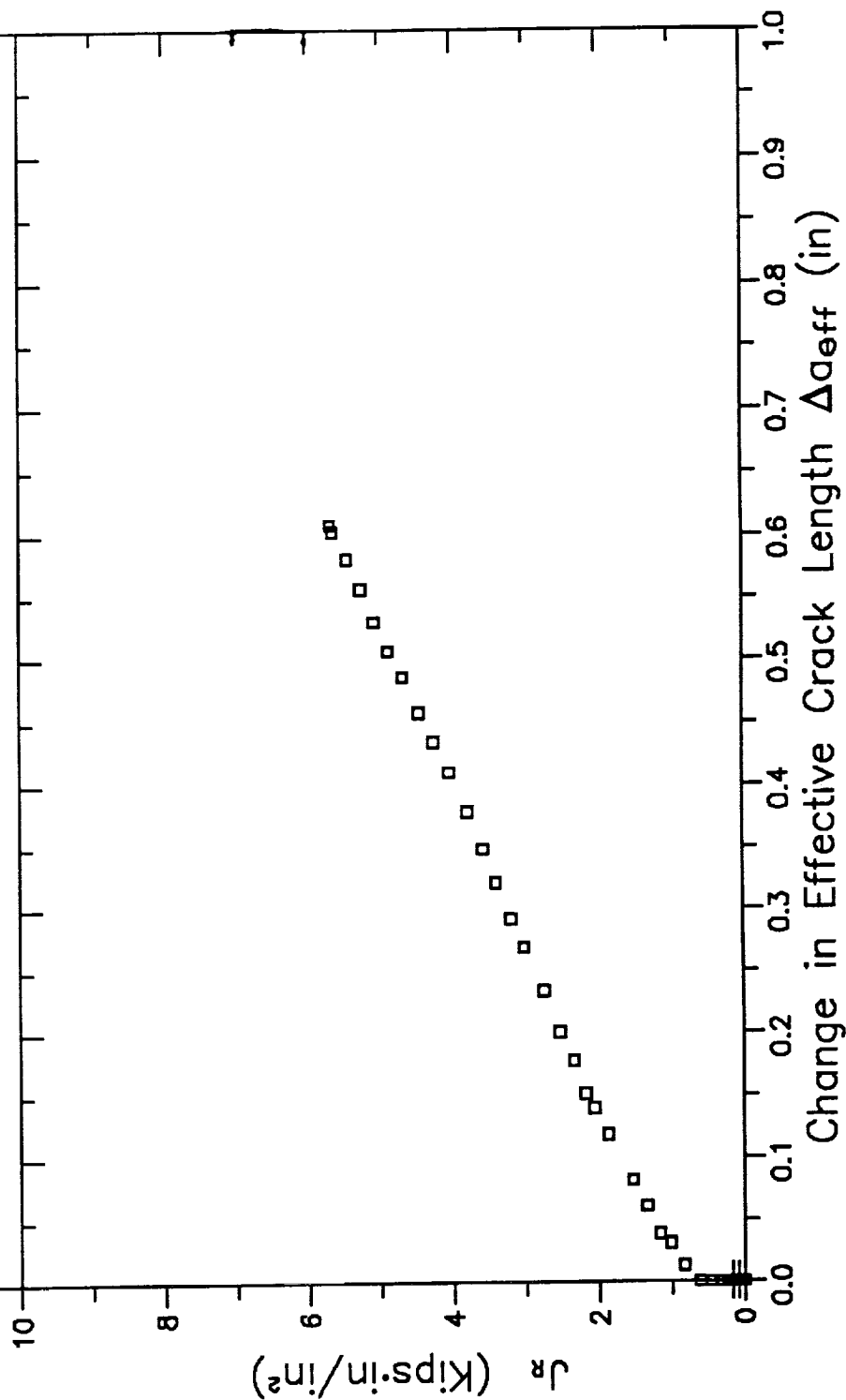


# RESISTANCE CURVE

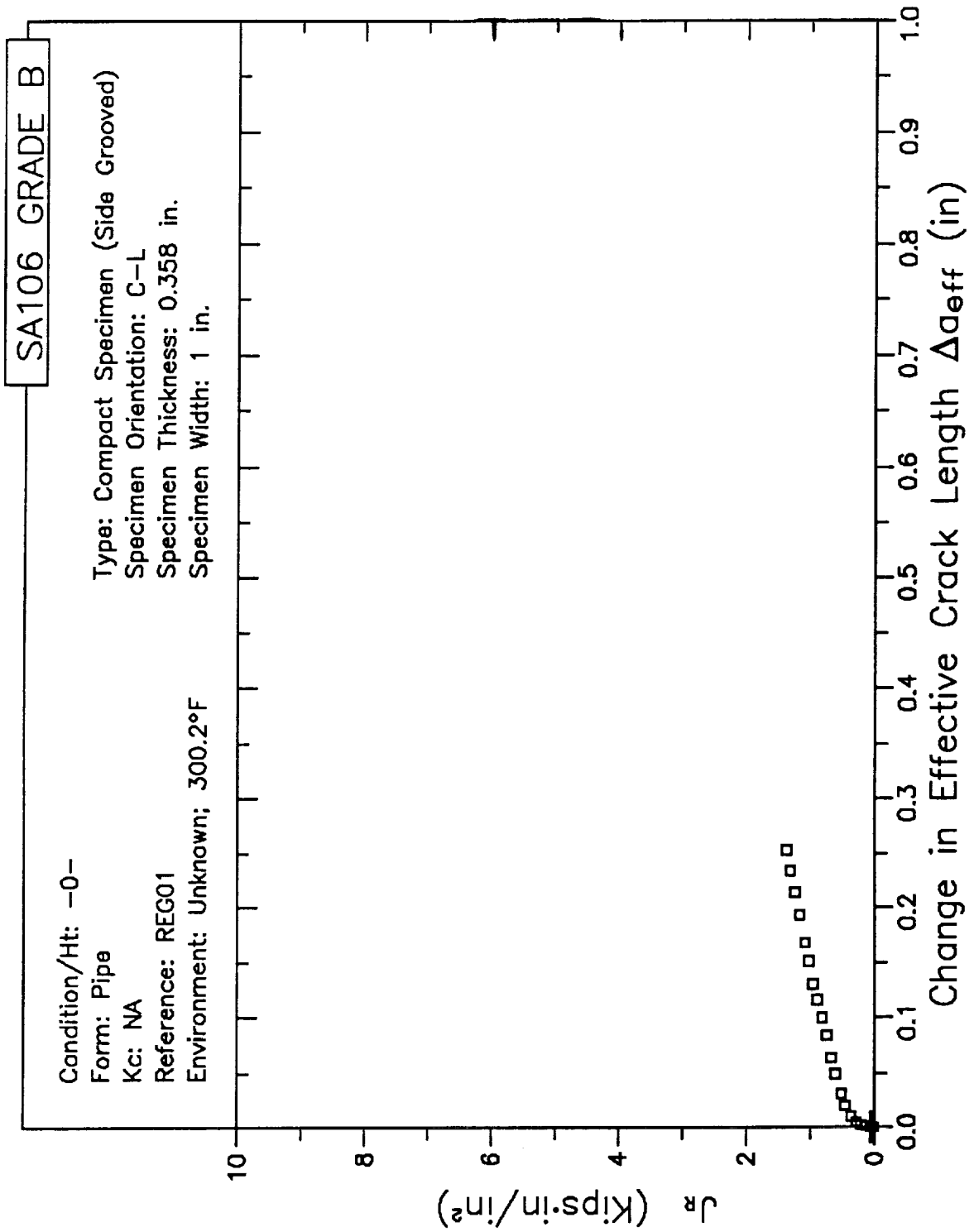
SA106 GRADE B

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG03  
Environment: Unknown; 300.2°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 0.827 in.  
Specimen Width: 1.969 in.



# RESISTANCE CURVE

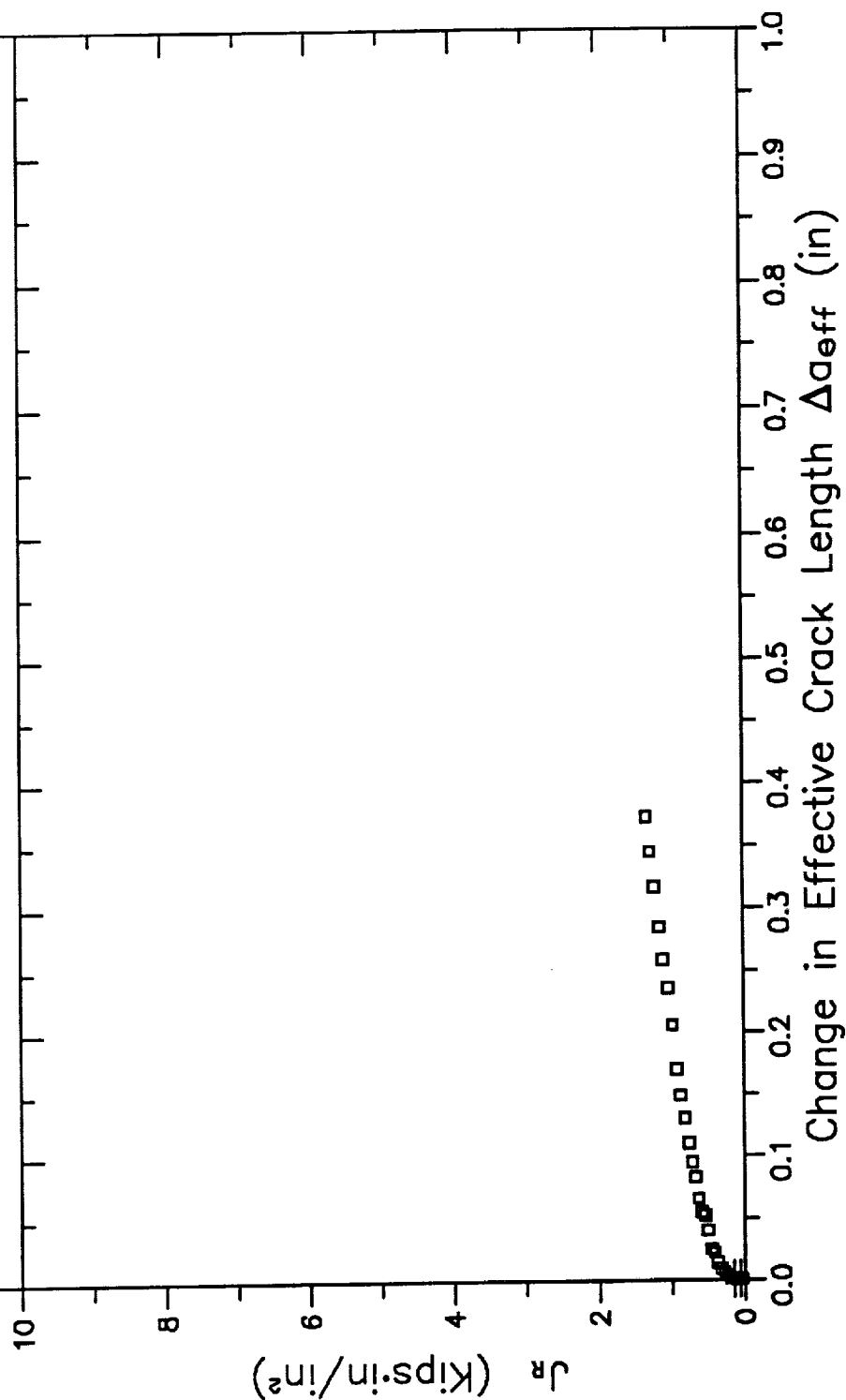


# RESISTANCE CURVE

SA106 GRADE B

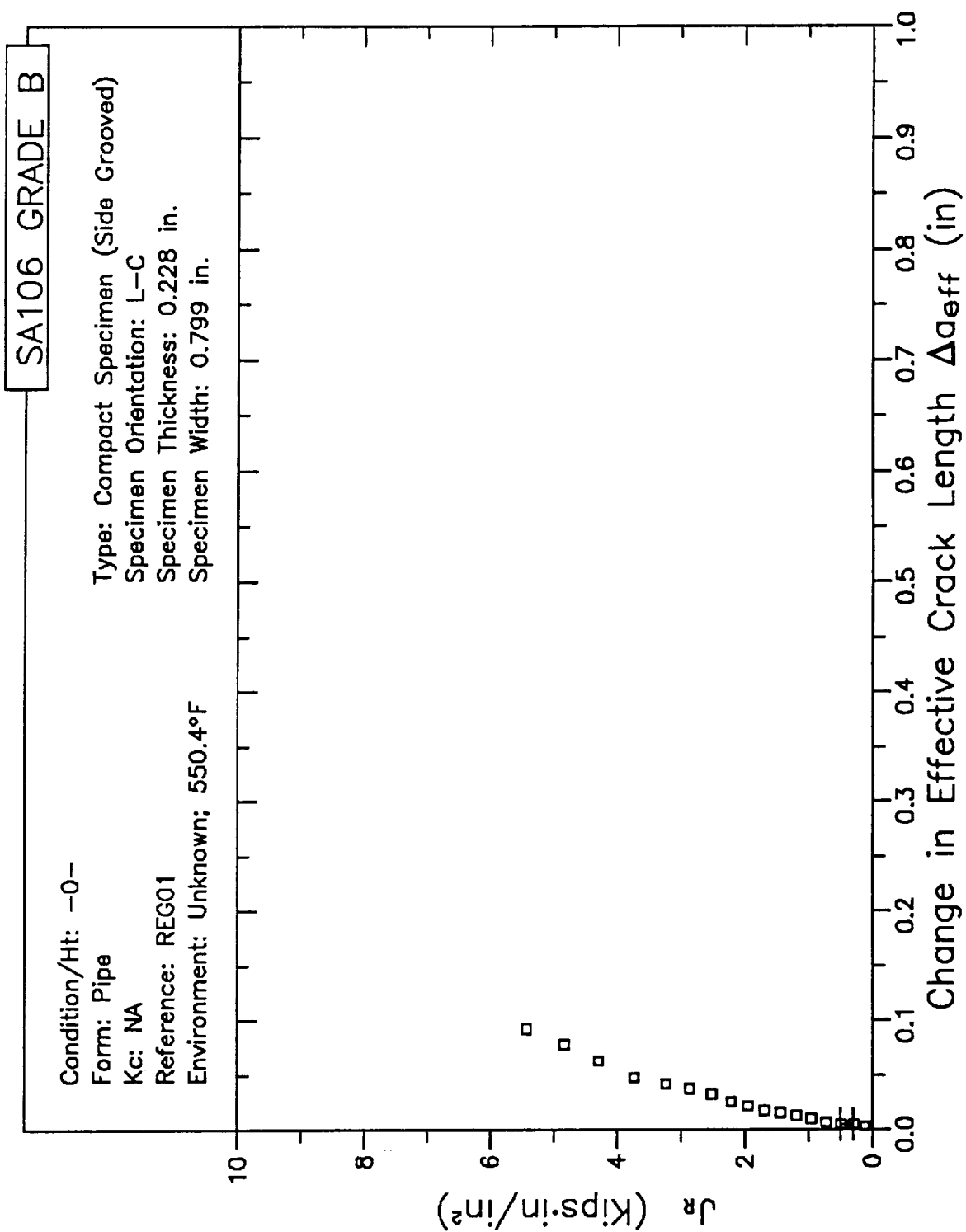
Condition/Hlt: -0-  
Form: Pipe  
Kc: NA  
Reference: REG01  
Environment: Unknown; 300.2°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: C-L  
Specimen Thickness: 0.701 in.  
Specimen Width: 1.598 in.



B3-478

# RESISTANCE CURVE

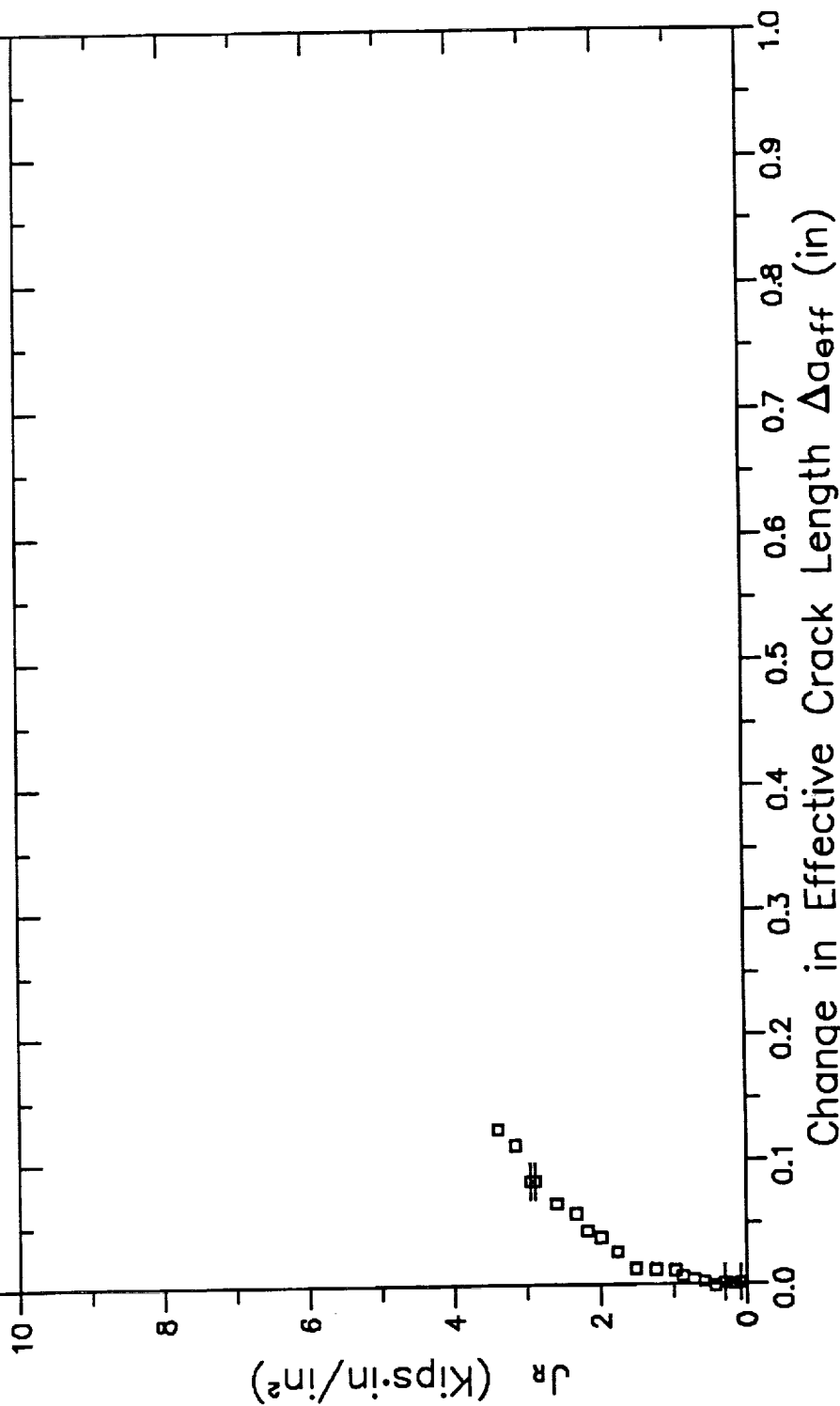


# RESISTANCE CURVE

SA106 GRADE B

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG01  
Environment: Unknown; 550.4°F

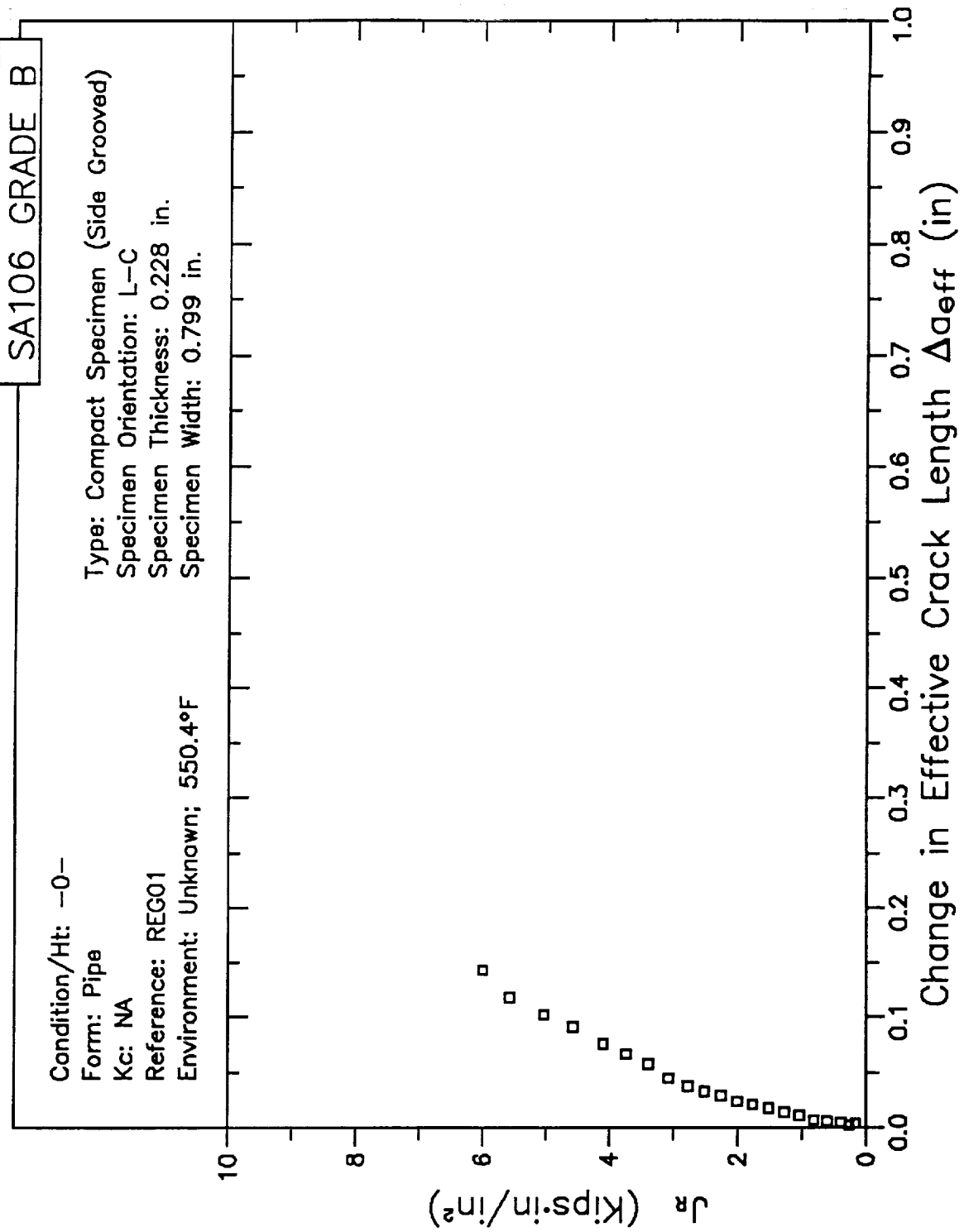
Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 0.228 in.  
Specimen Width: 0.799 in.



B3-480



# RESISTANCE CURVE

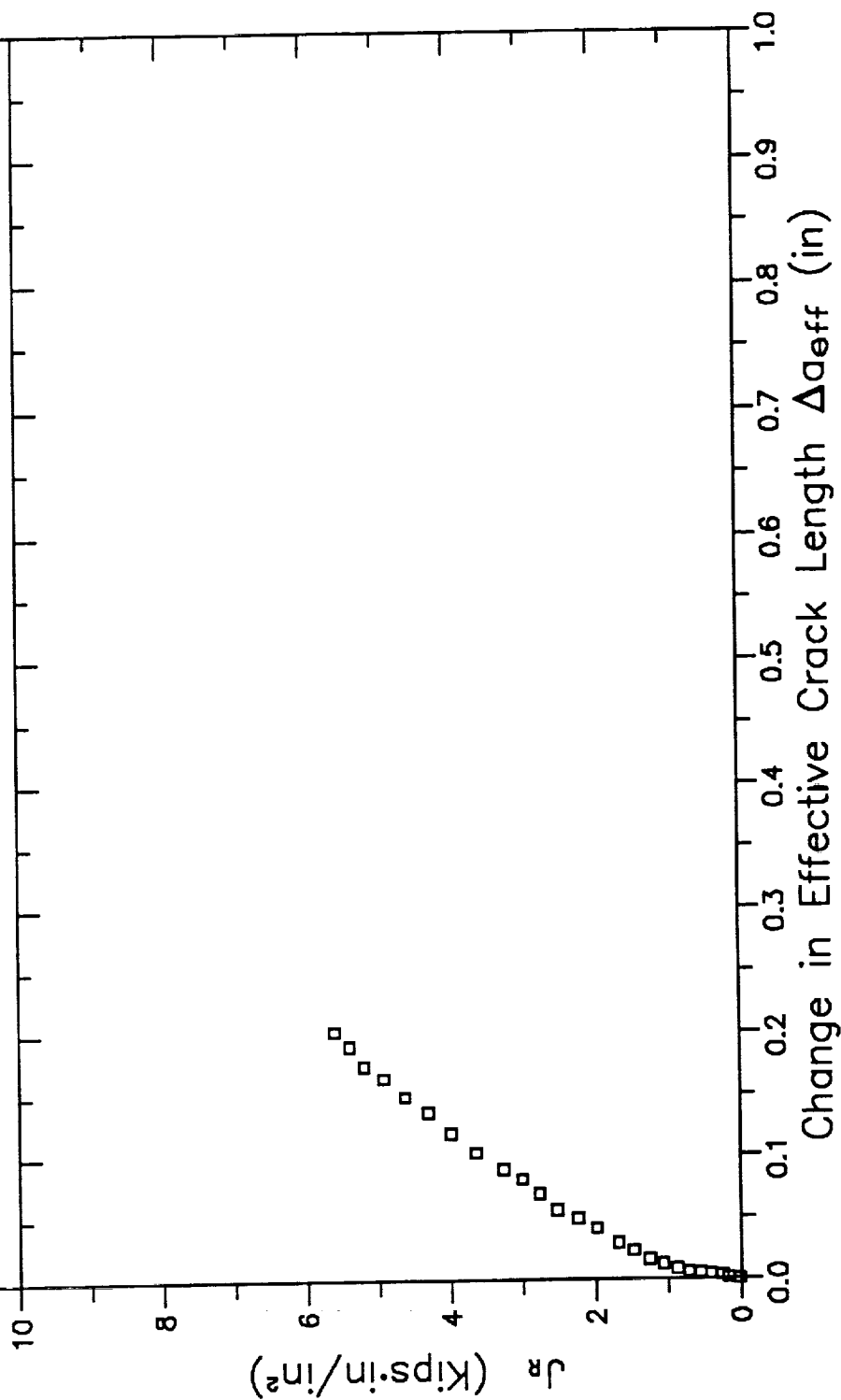


# RESISTANCE CURVE

SA106 GRADE B

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG01  
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 0.228 in.  
Specimen Width: 0.799 in.



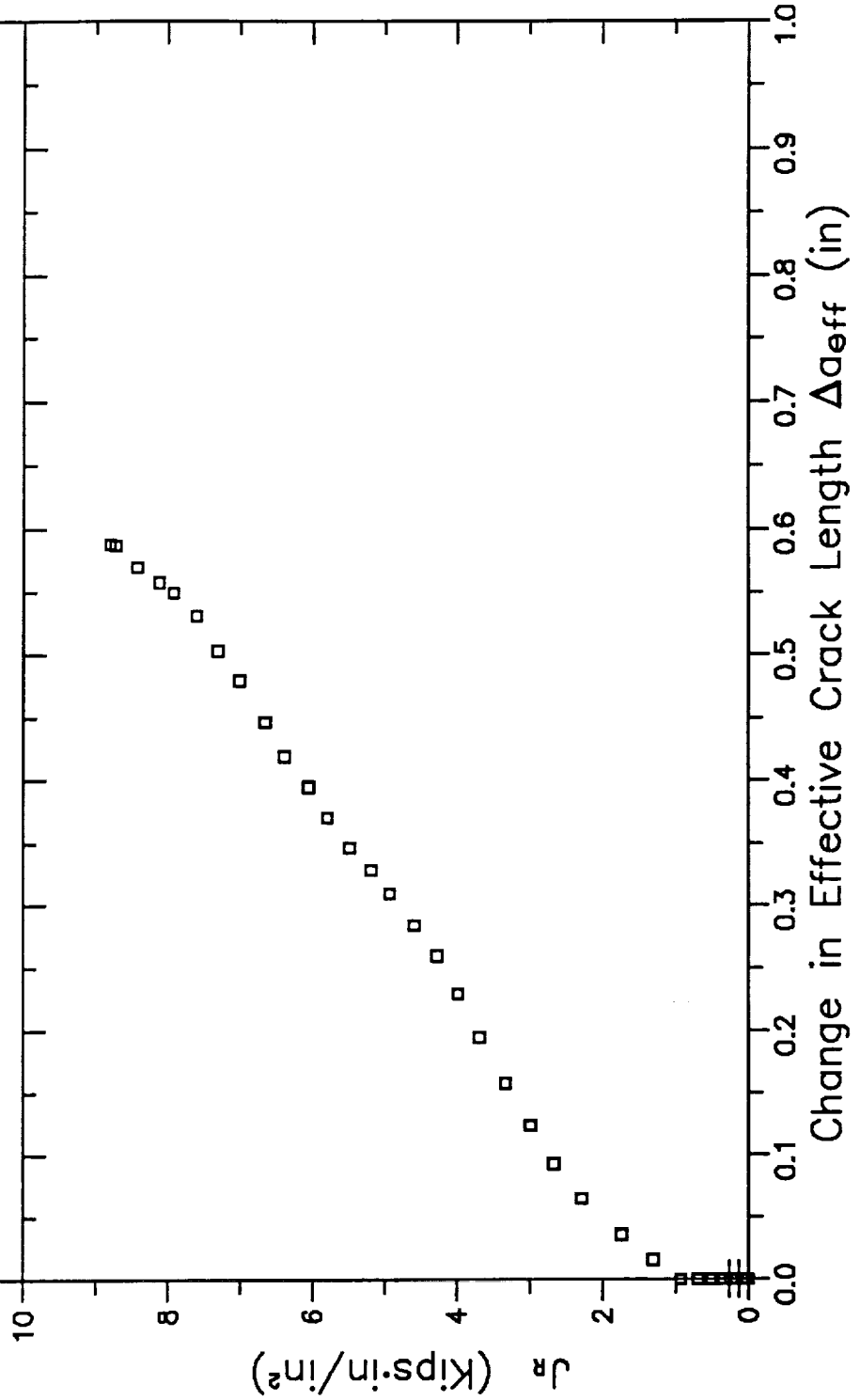
B3-482

# RESISTANCE CURVE

SA106 GRADE B

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG03  
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 0.354 in.  
Specimen Width: 1.969 in.

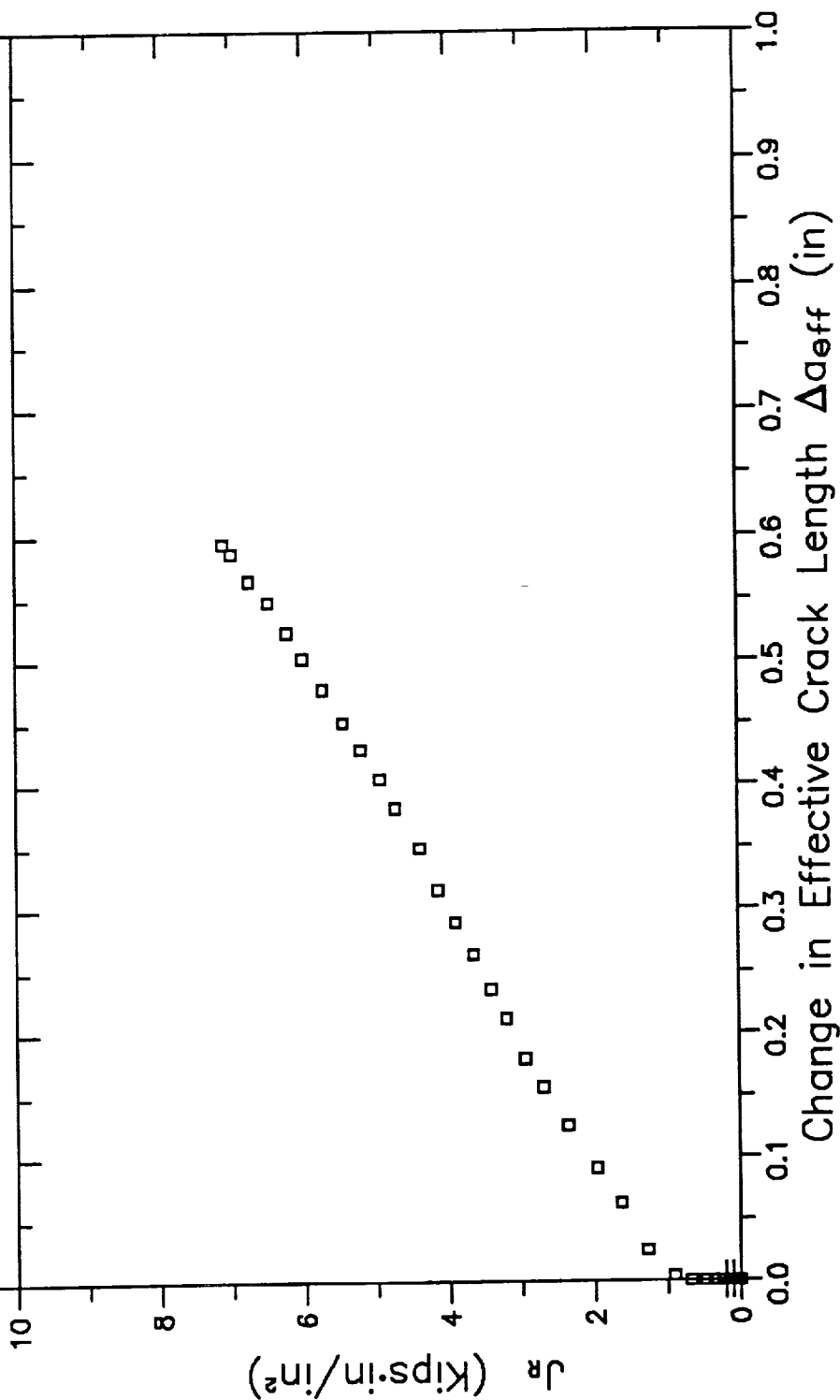


# RESISTANCE CURVE

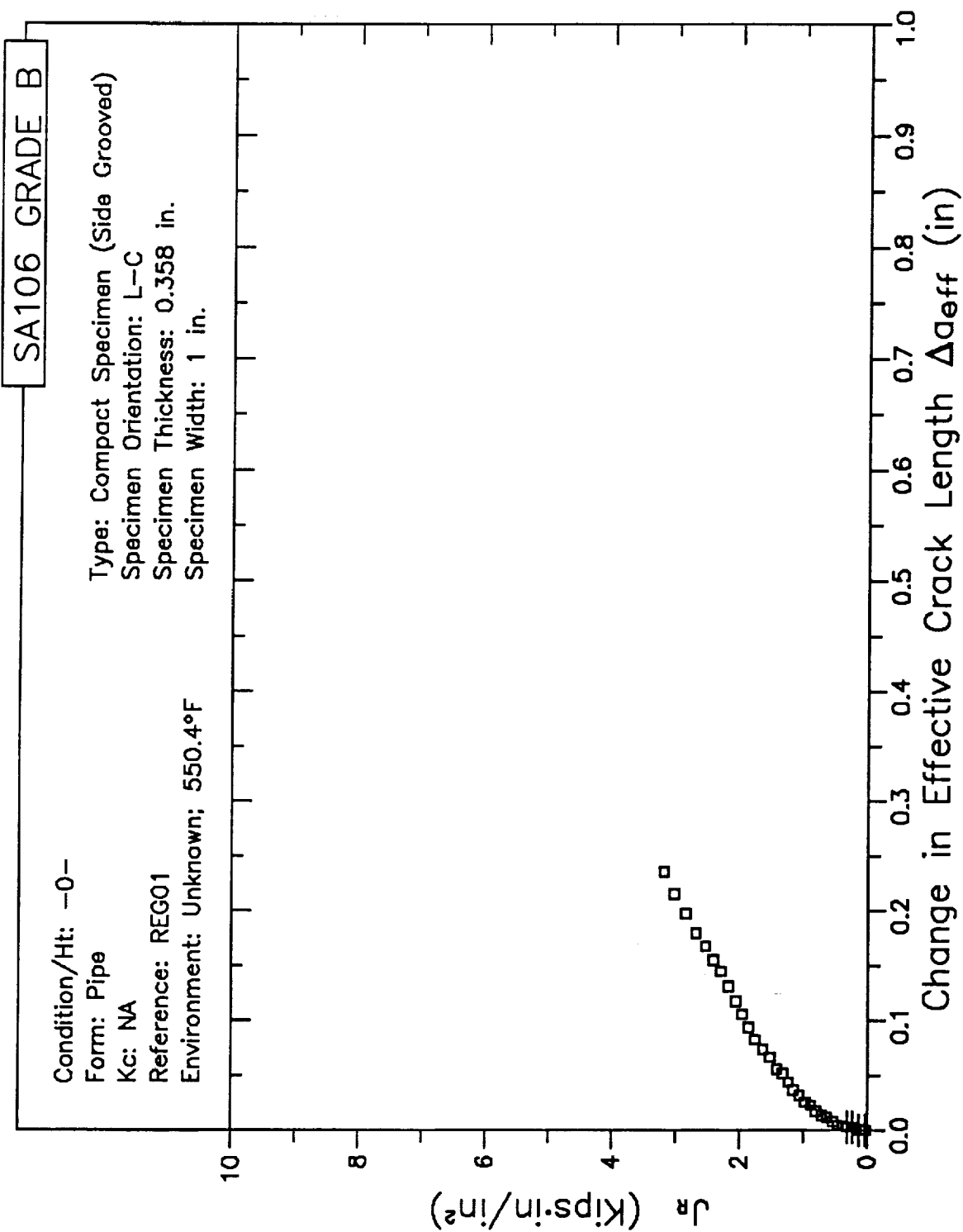
SA106 GRADE B

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG03  
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 0.354 in.  
Specimen Width: 1.969 in.



# RESISTANCE CURVE

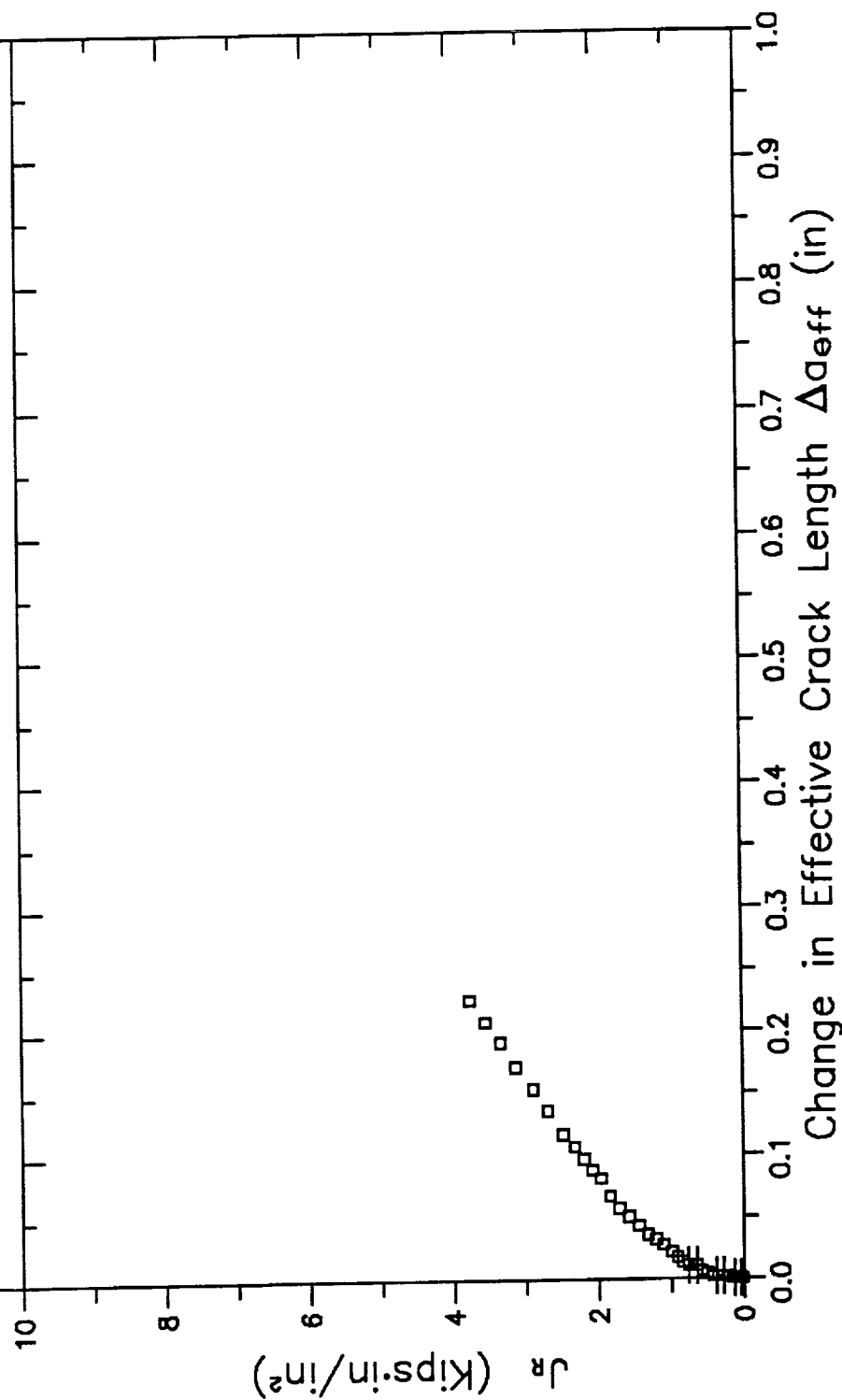


# RESISTANCE CURVE

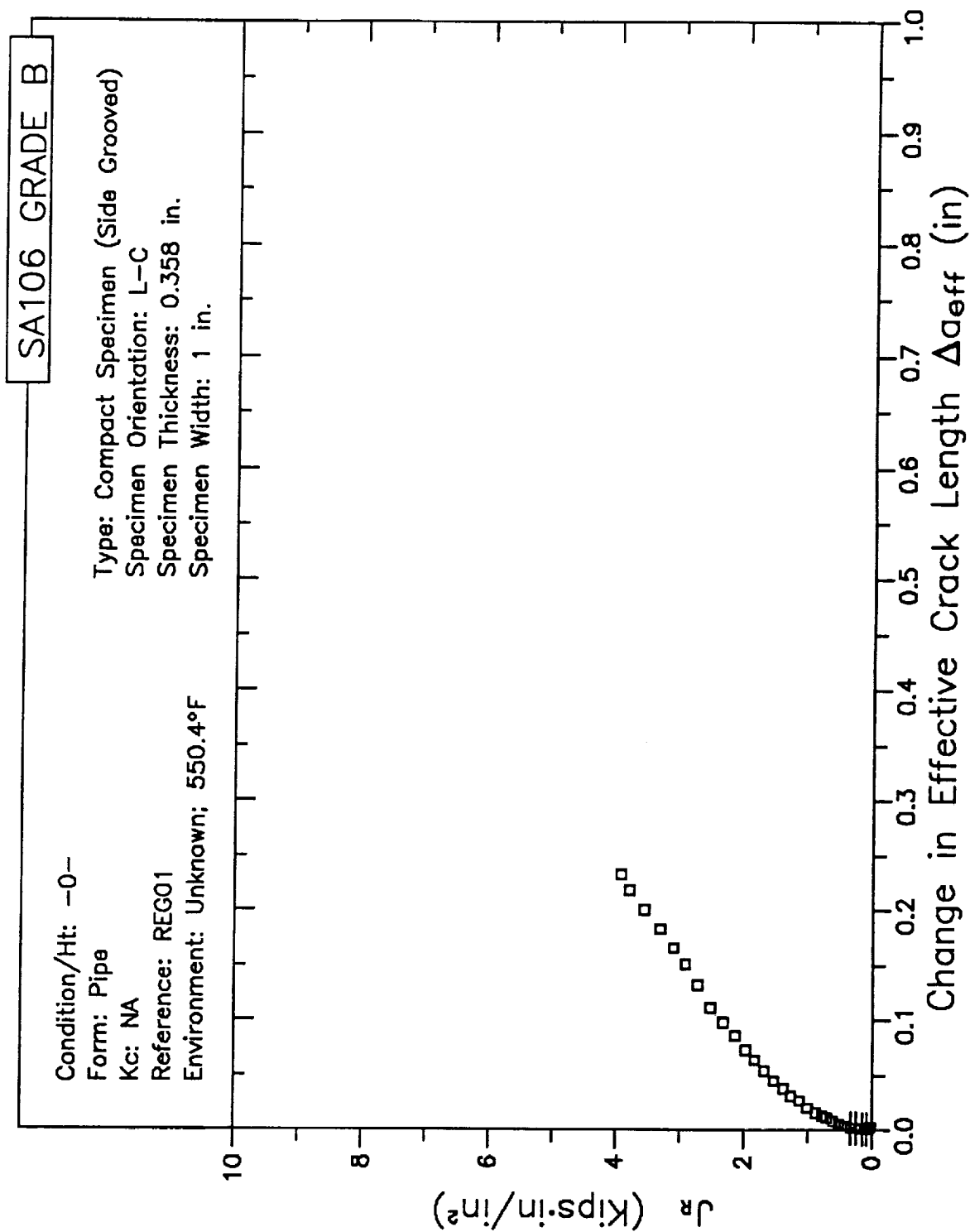
SA106 GRADE B

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG01  
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 0.358 in.  
Specimen Width: 1 in.



# RESISTANCE CURVE

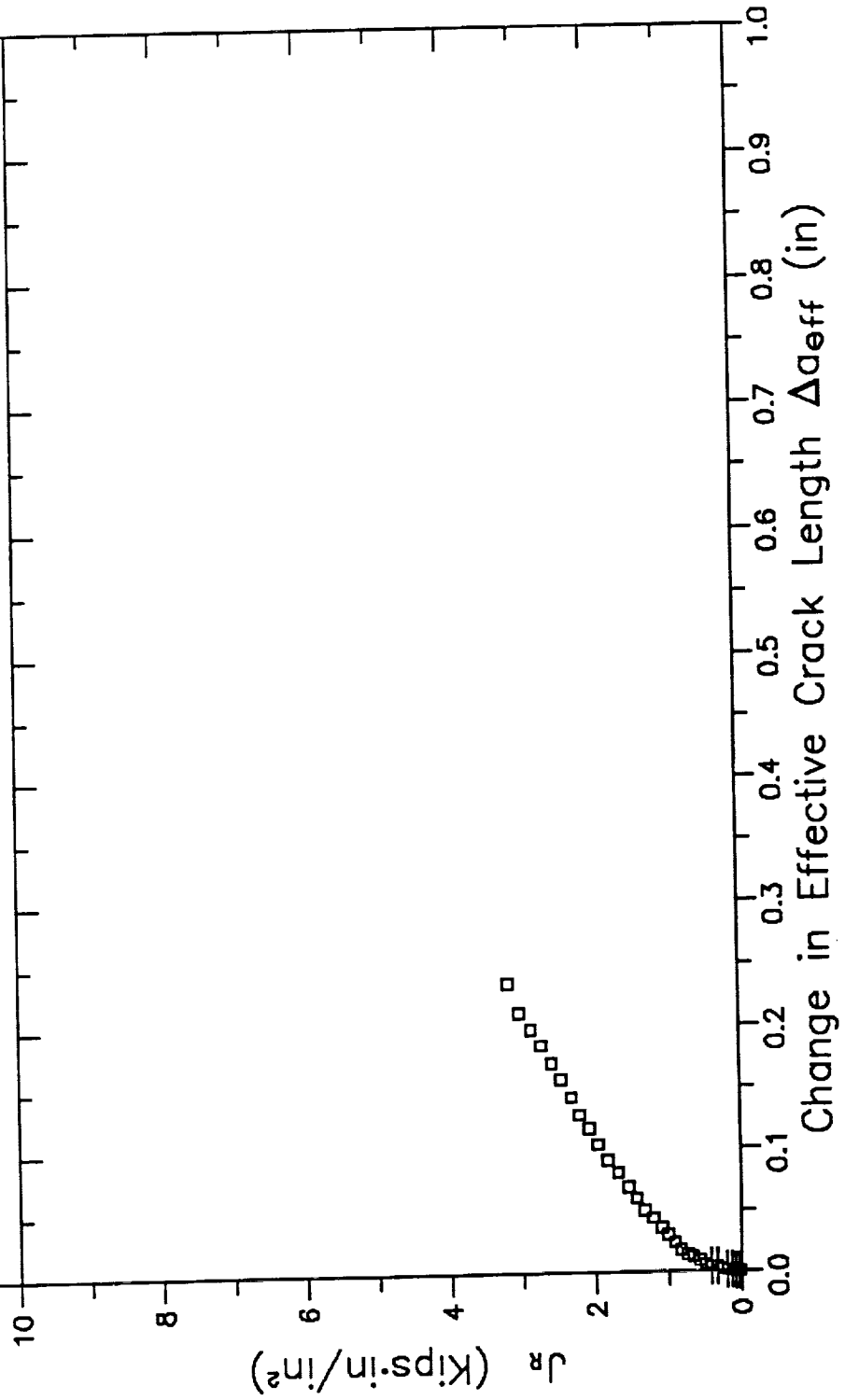


# RESISTANCE CURVE

SA106 GRADE B

Condition/Hlt: -0-  
Form: Pipe  
Kc: NA  
Reference: REG01  
Environment: Unknown; 550.4°F

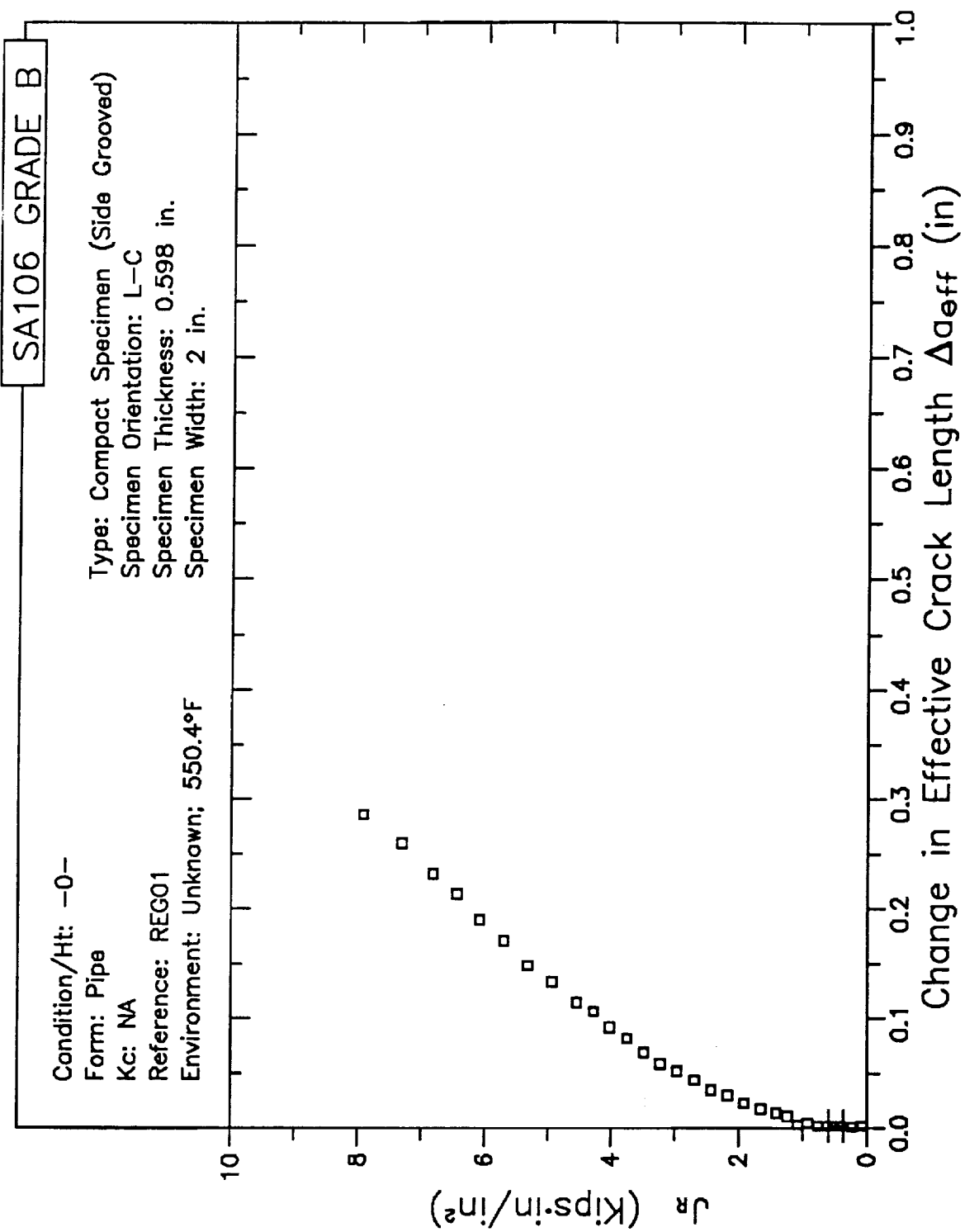
Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 0.358 in.  
Specimen Width: 1 in.



B3-488



# RESISTANCE CURVE

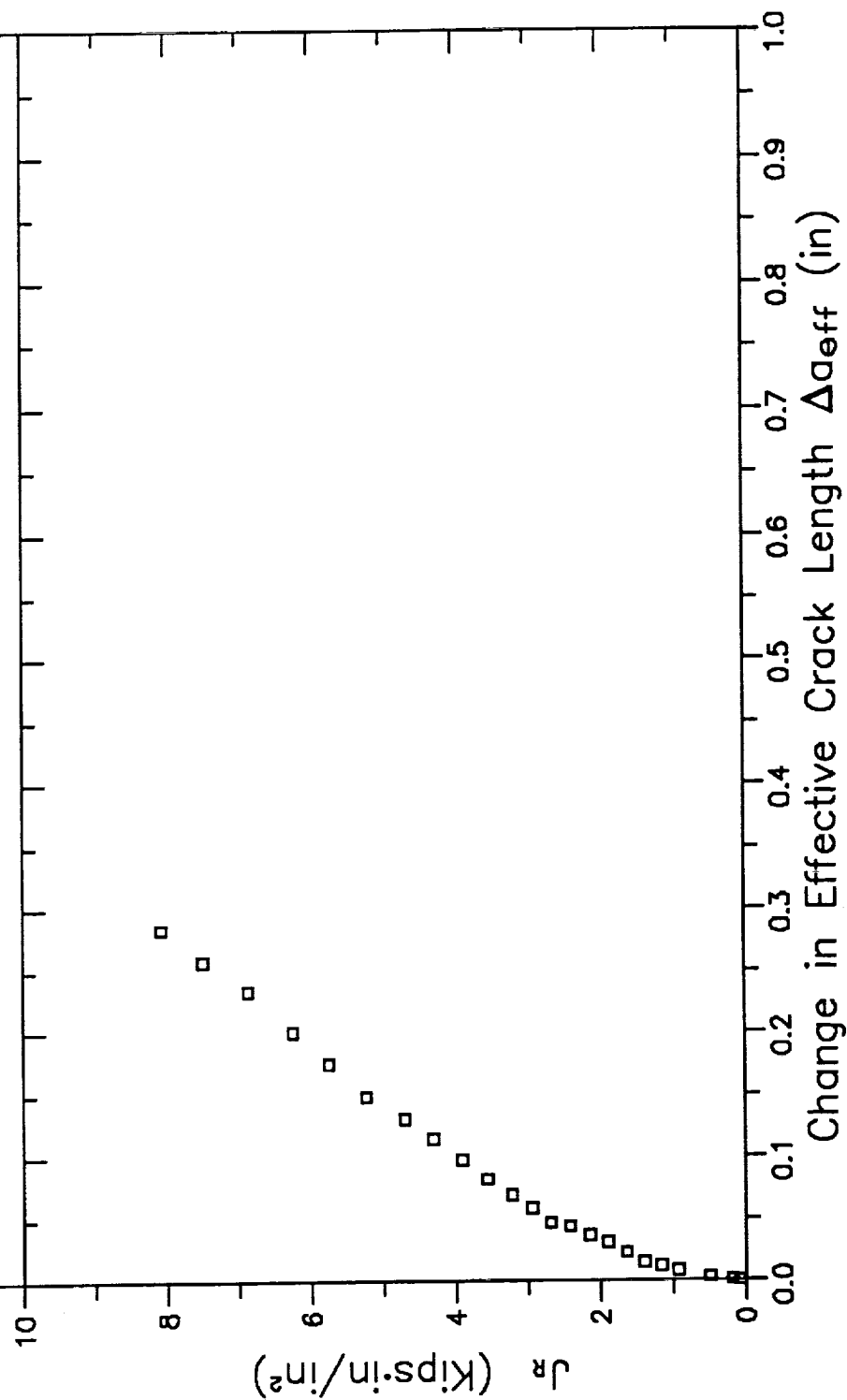


# RESISTANCE CURVE

SA106 GRADE B

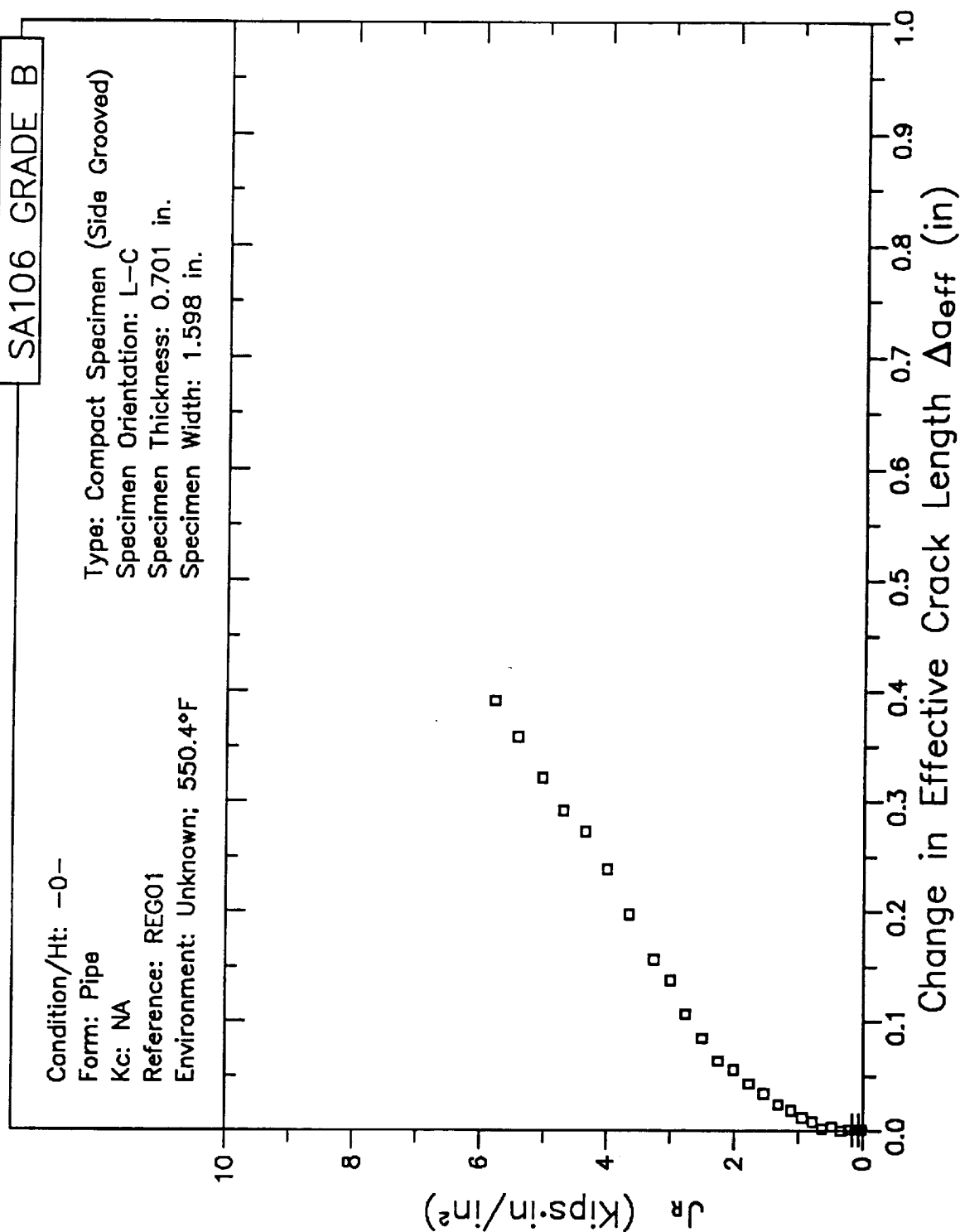
Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG01  
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 0.598 in.  
Specimen Width: 2 in.



B3-490

# RESISTANCE CURVE

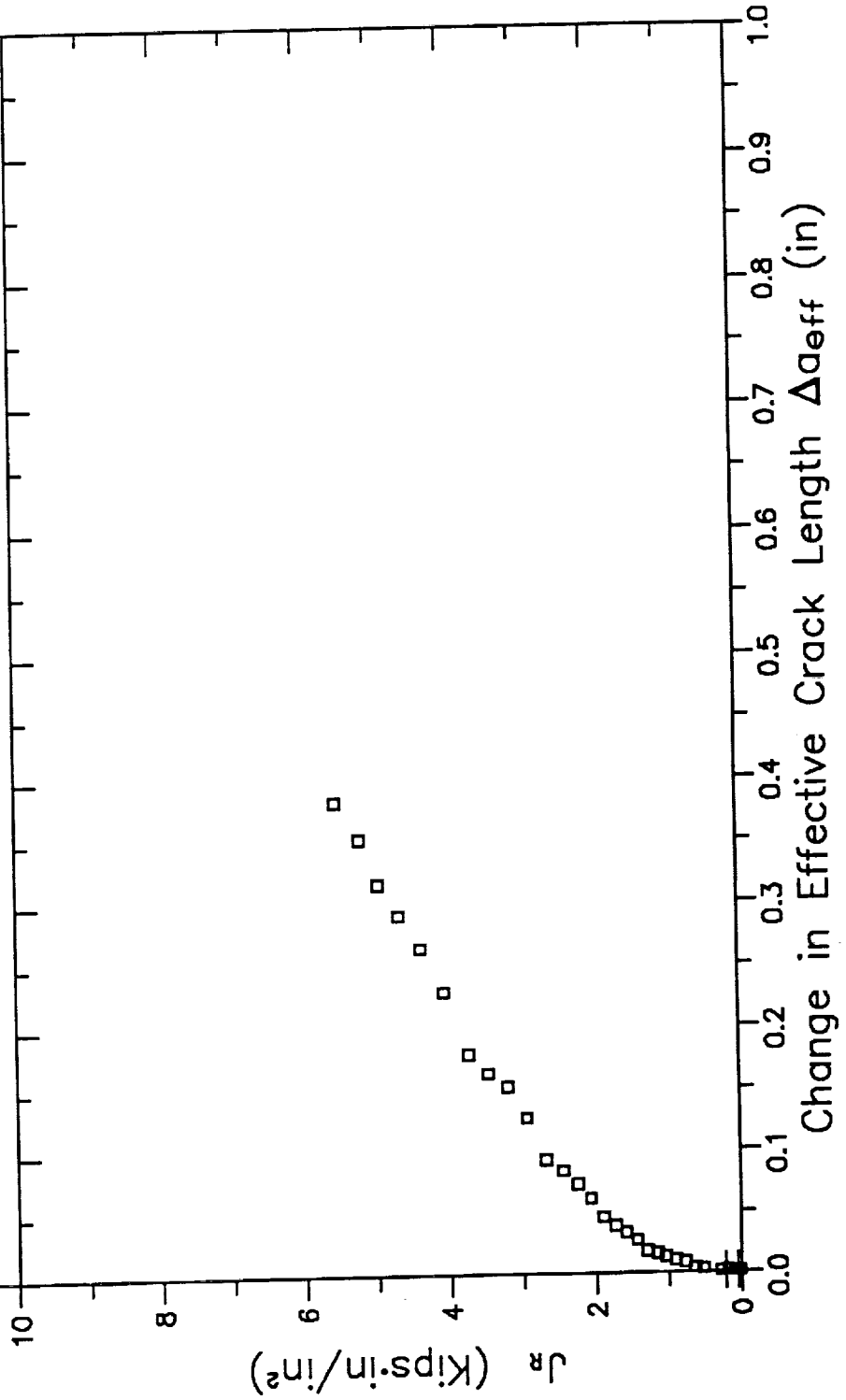


# RESISTANCE CURVE

SA106 GRADE B

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG01  
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 0.701 in.  
Specimen Width: 1.598 in.

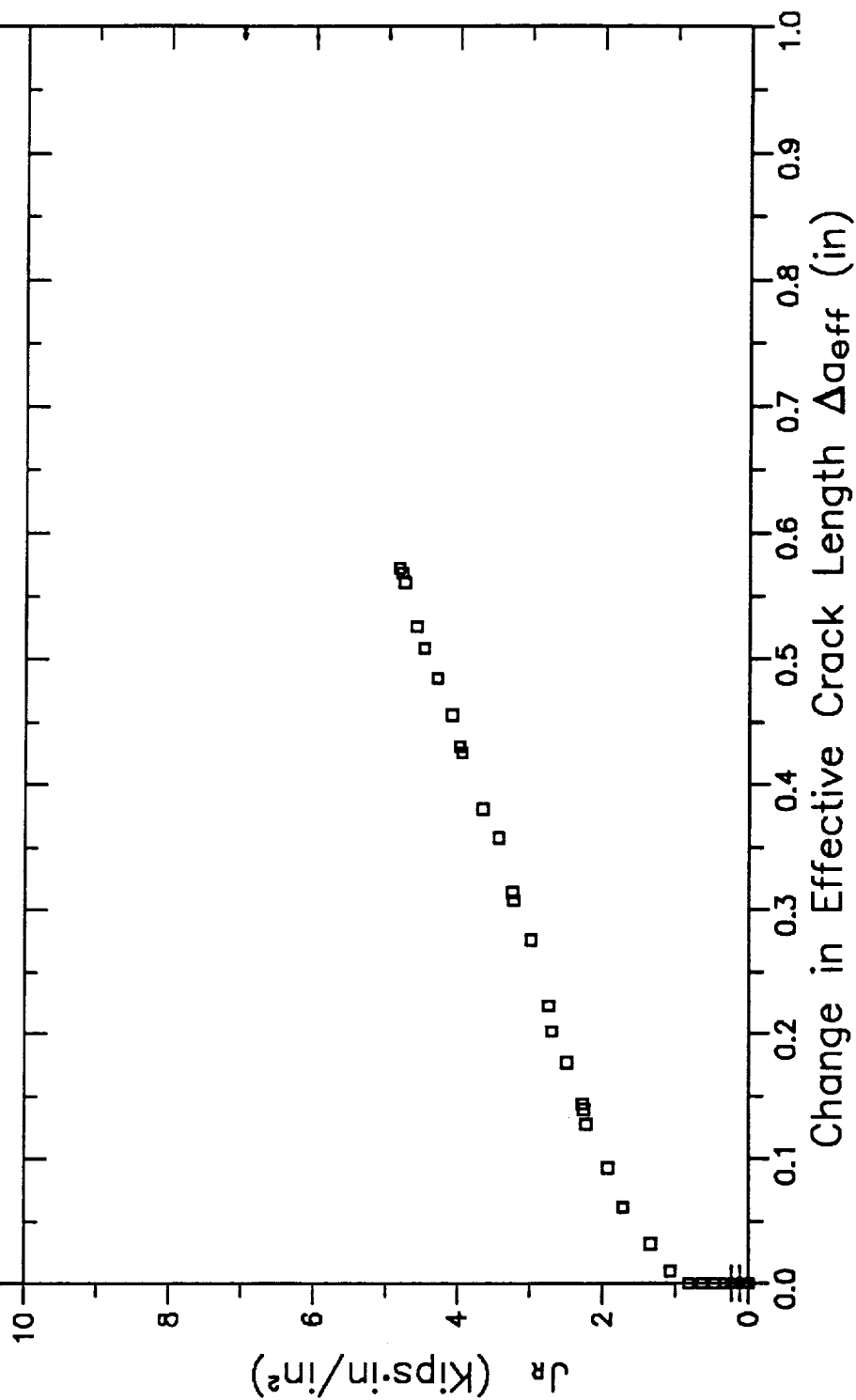


# RESISTANCE CURVE

SA106 GRADE B

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG03  
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 0.827 in.  
Specimen Width: 1.969 in.

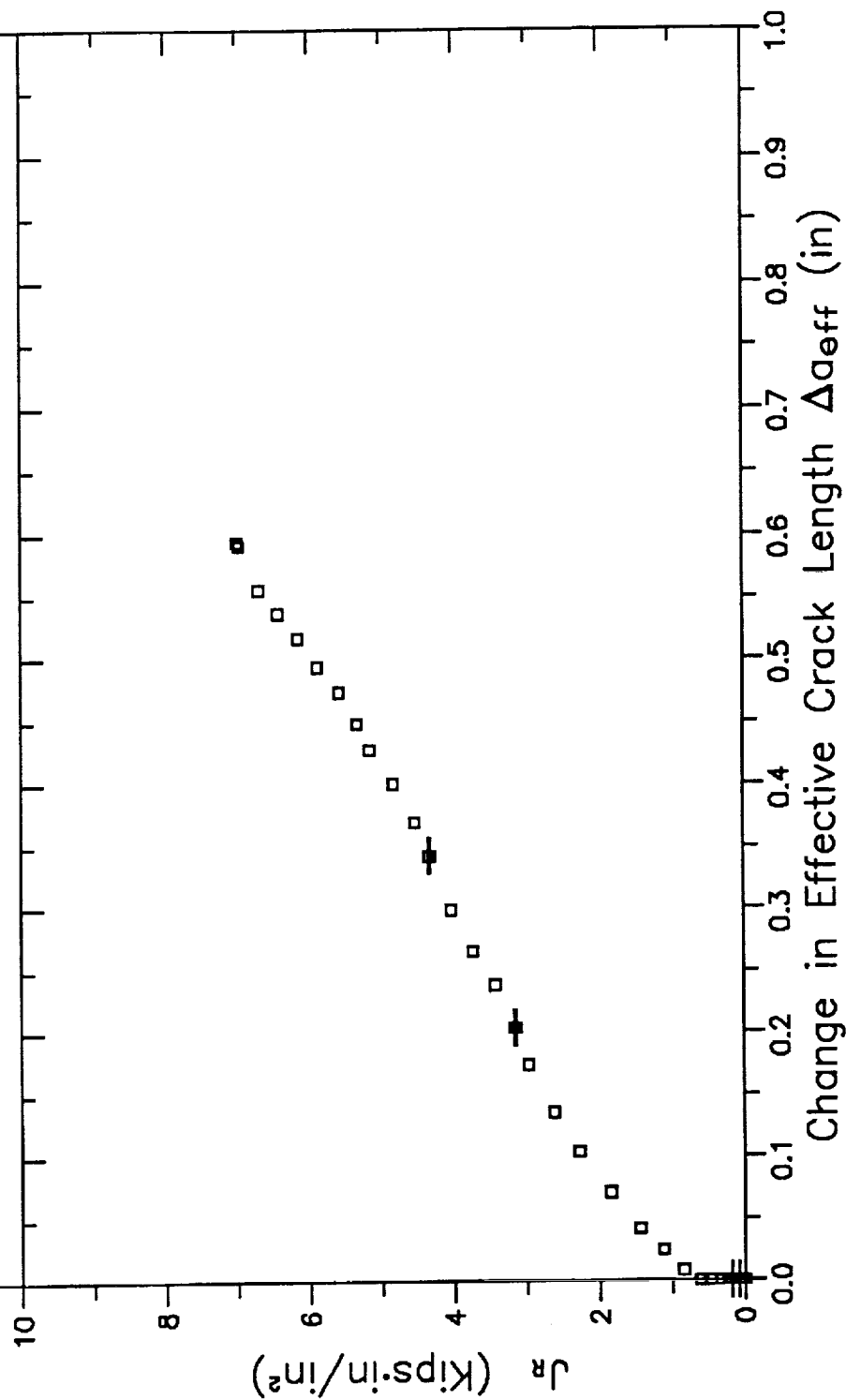


# RESISTANCE CURVE

SA106 GRADE B

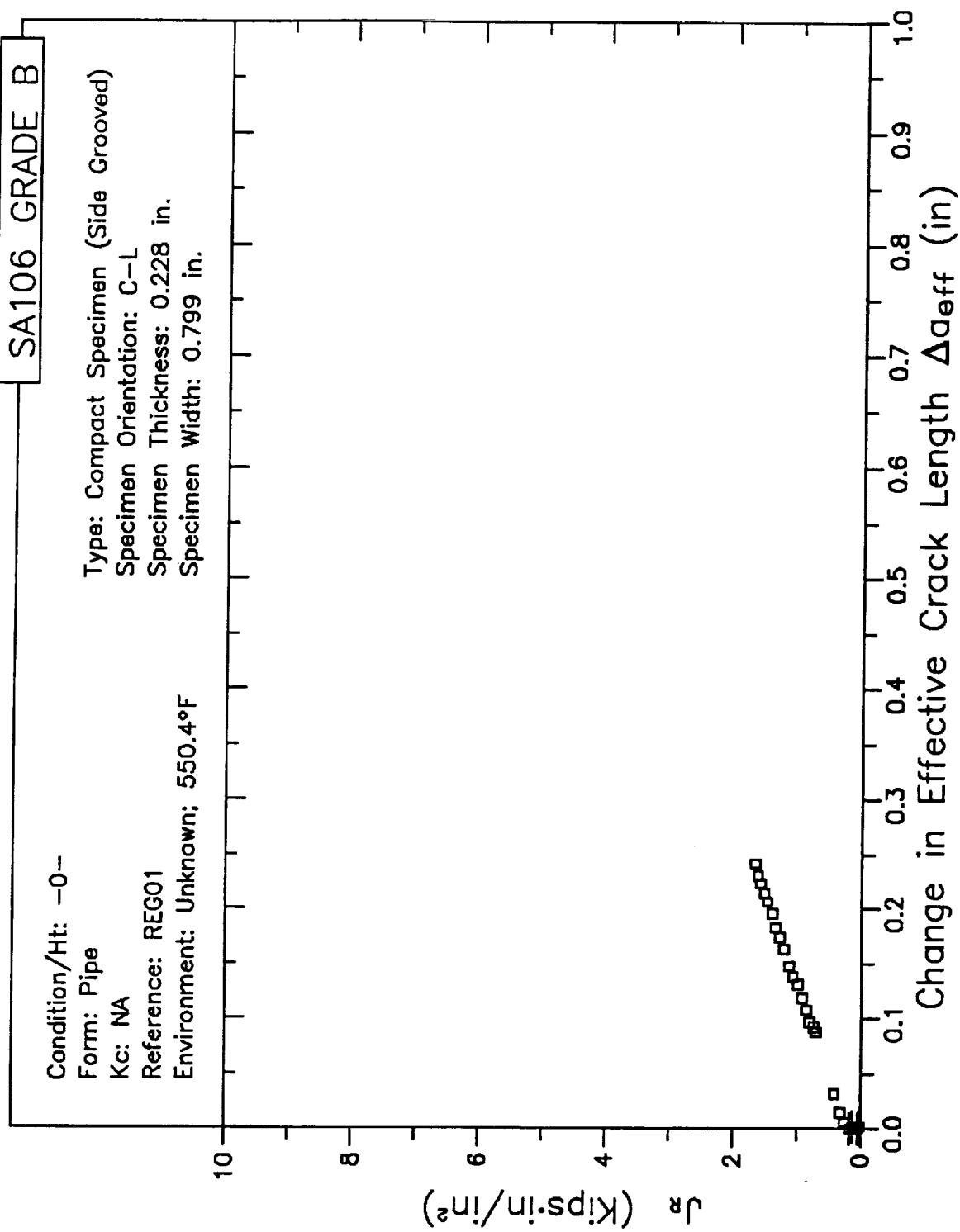
Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG03  
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 0.827 in.  
Specimen Width: 1.969 in.



B3-494

# RESISTANCE CURVE

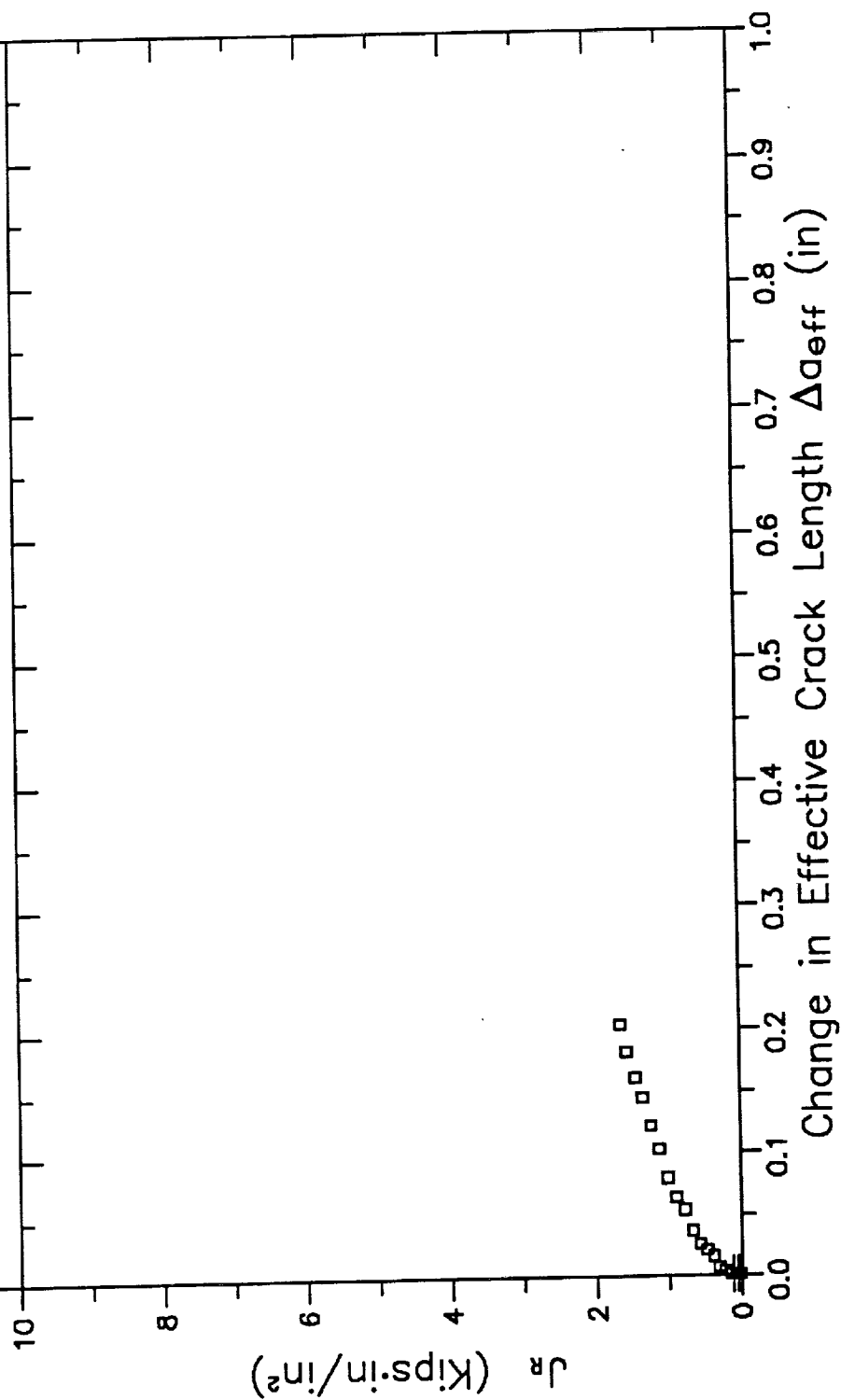


# RESISTANCE CURVE

SA106 GRADE B

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG01  
Environment: Unknown; 550.4°F

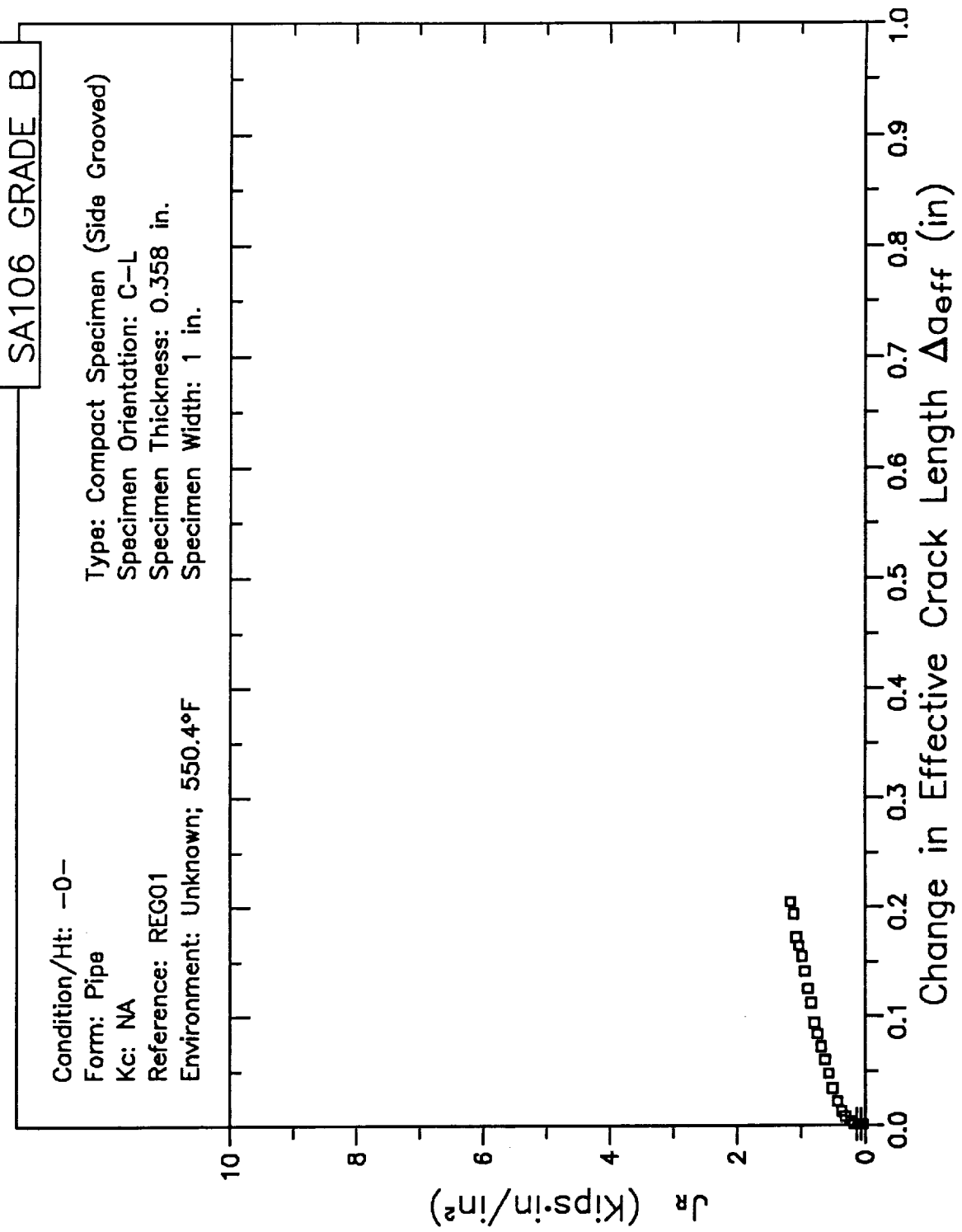
Type: Compact Specimen (Side Grooved)  
Specimen Orientation: C-L  
Specimen Thickness: 0.228 in.  
Specimen Width: 0.799 in.



B3-496



# RESISTANCE CURVE



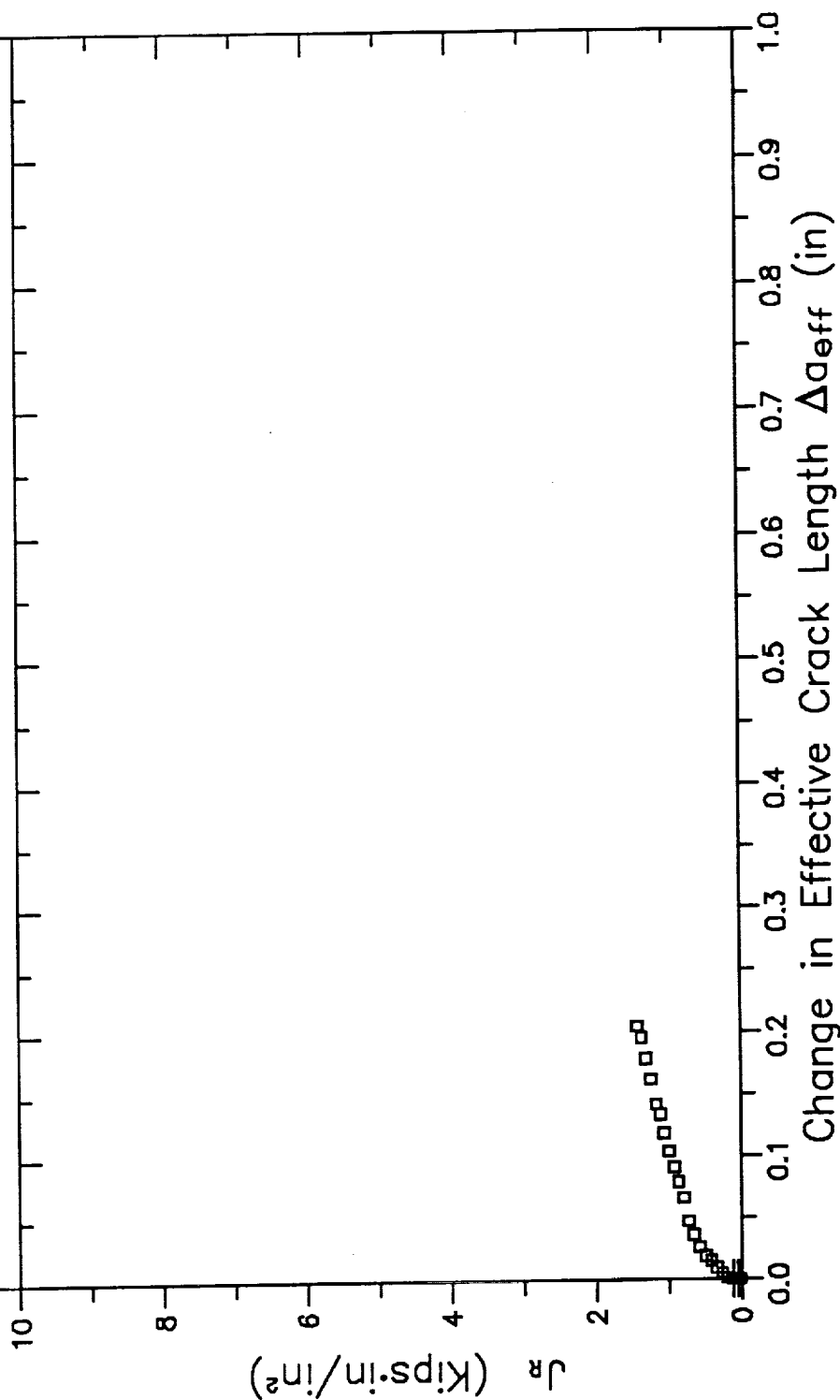
B3-497

# RESISTANCE CURVE

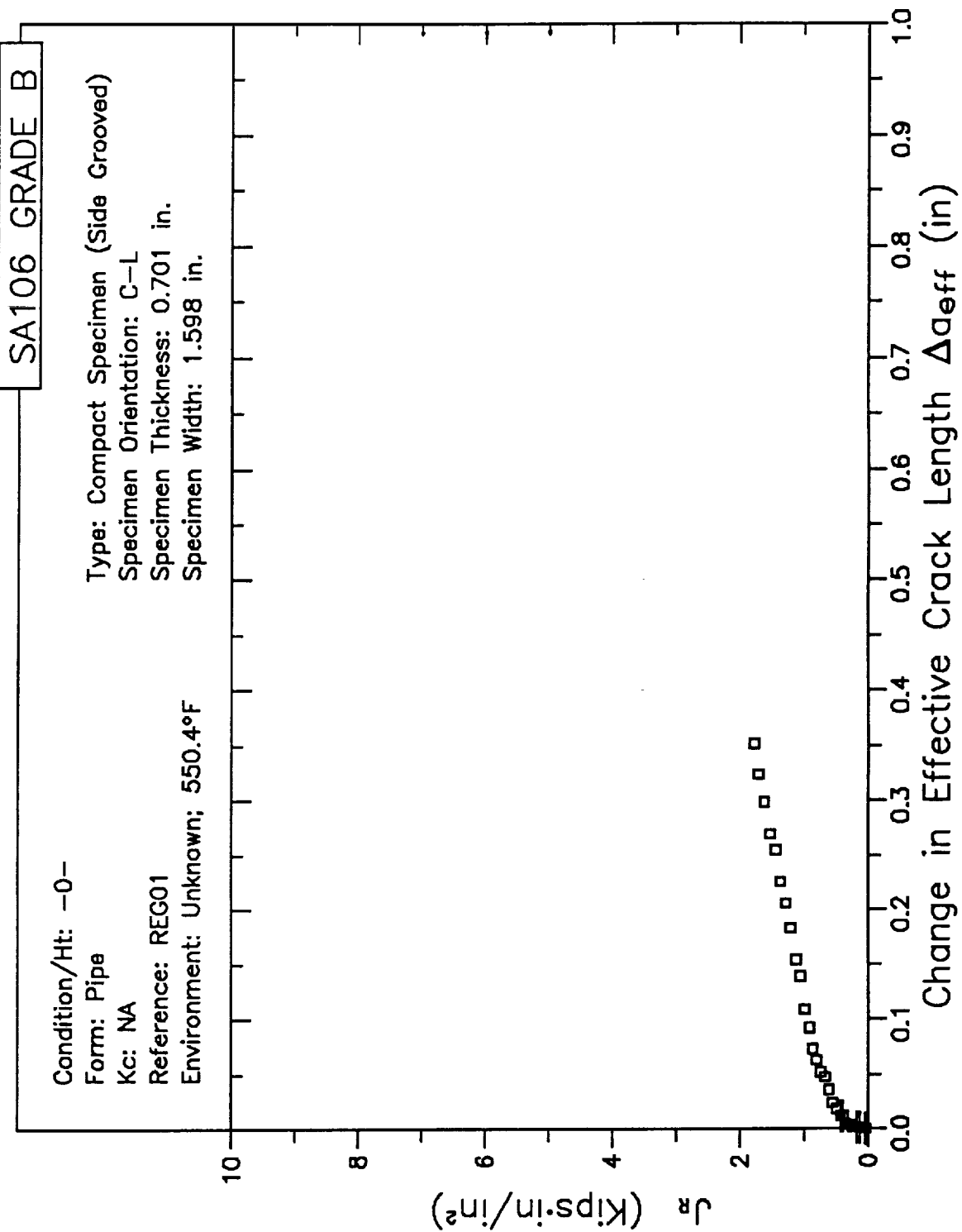
SA106 GRADE B

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG01  
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: C-L  
Specimen Thickness: 0.358 in.  
Specimen Width: 1 in.



# RESISTANCE CURVE

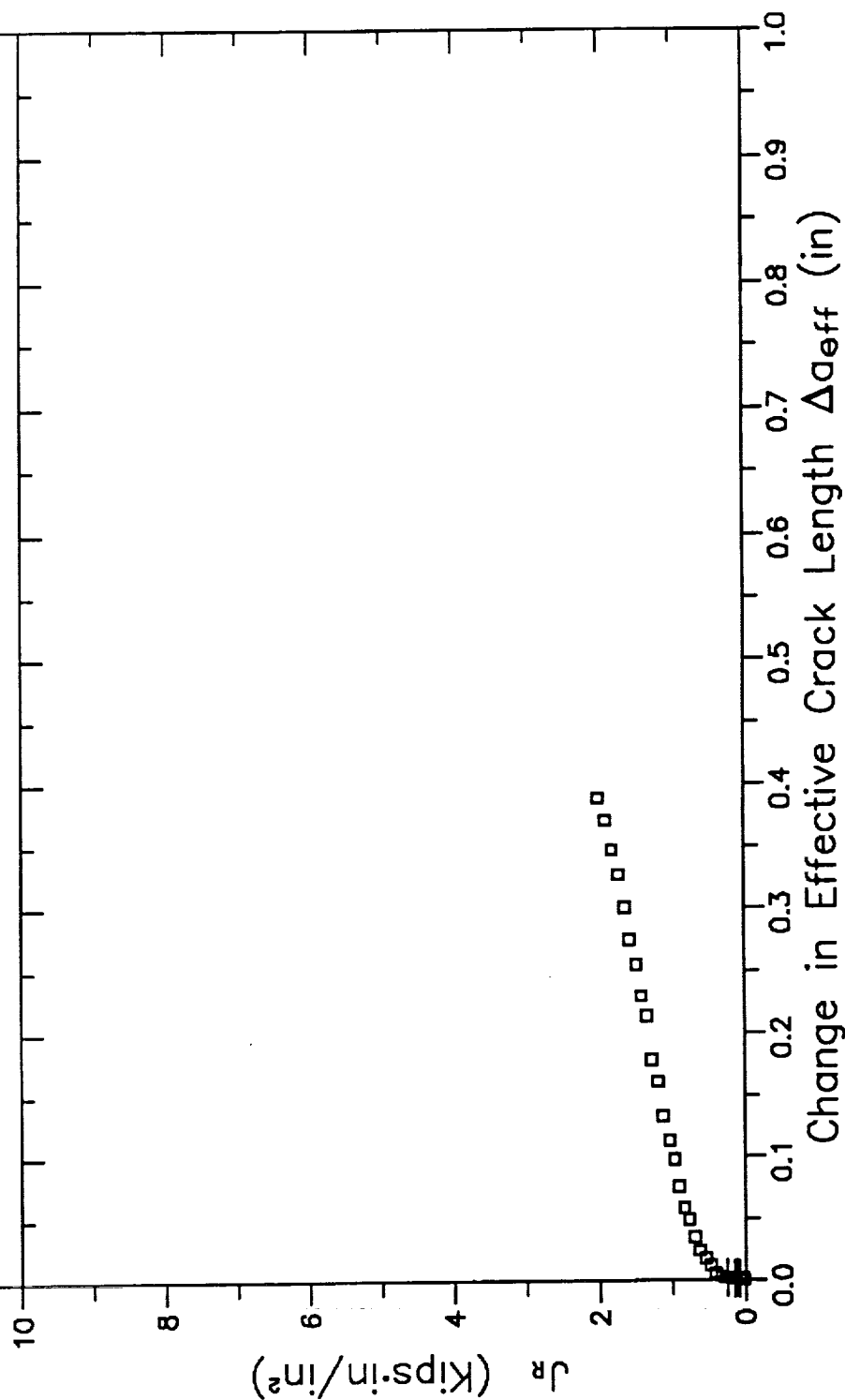


# RESISTANCE CURVE

SA106 GRADE B

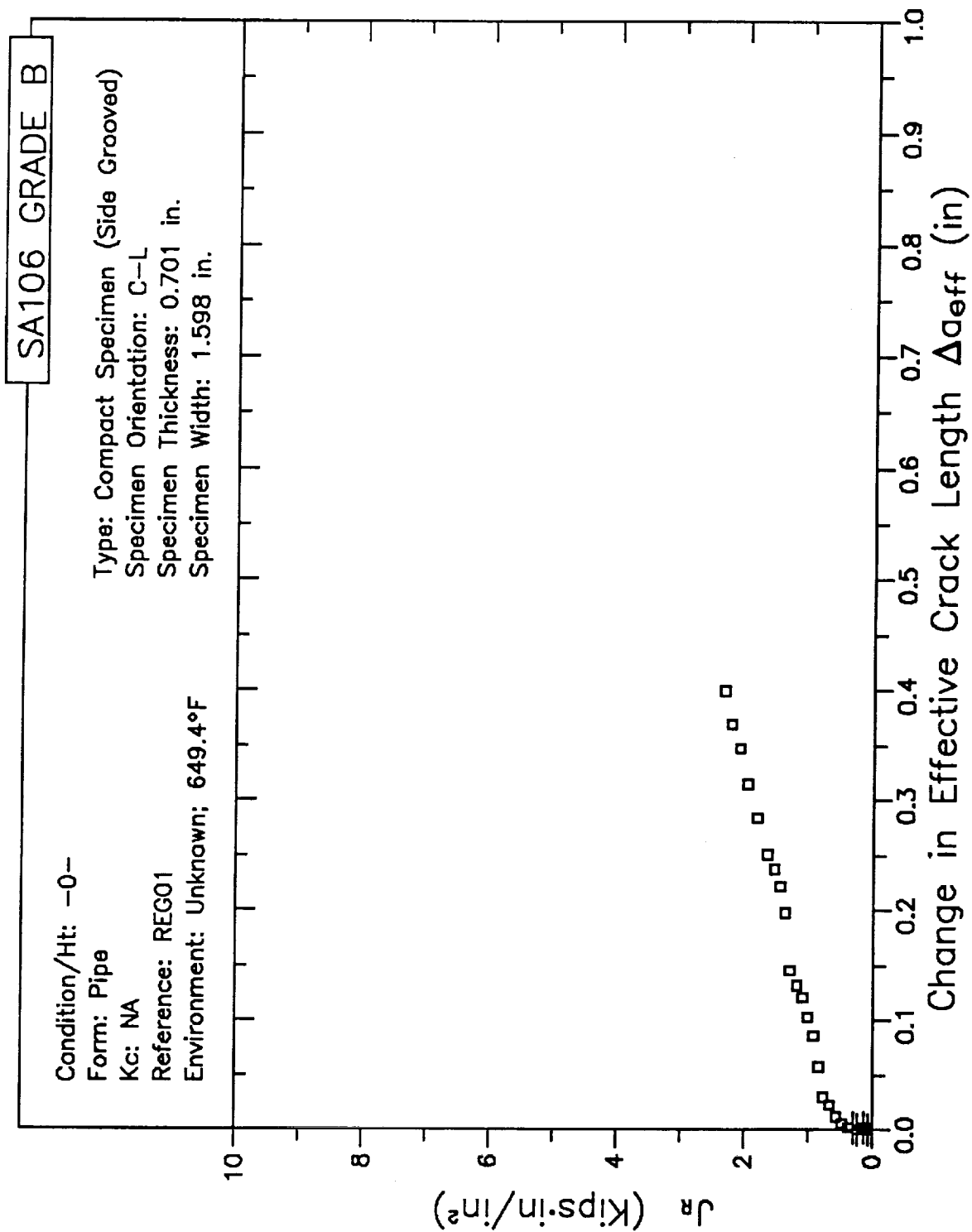
Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG01  
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: C-L  
Specimen Thickness: 0.701 in.  
Specimen Width: 1.598 in.



B3-500

# RESISTANCE CURVE

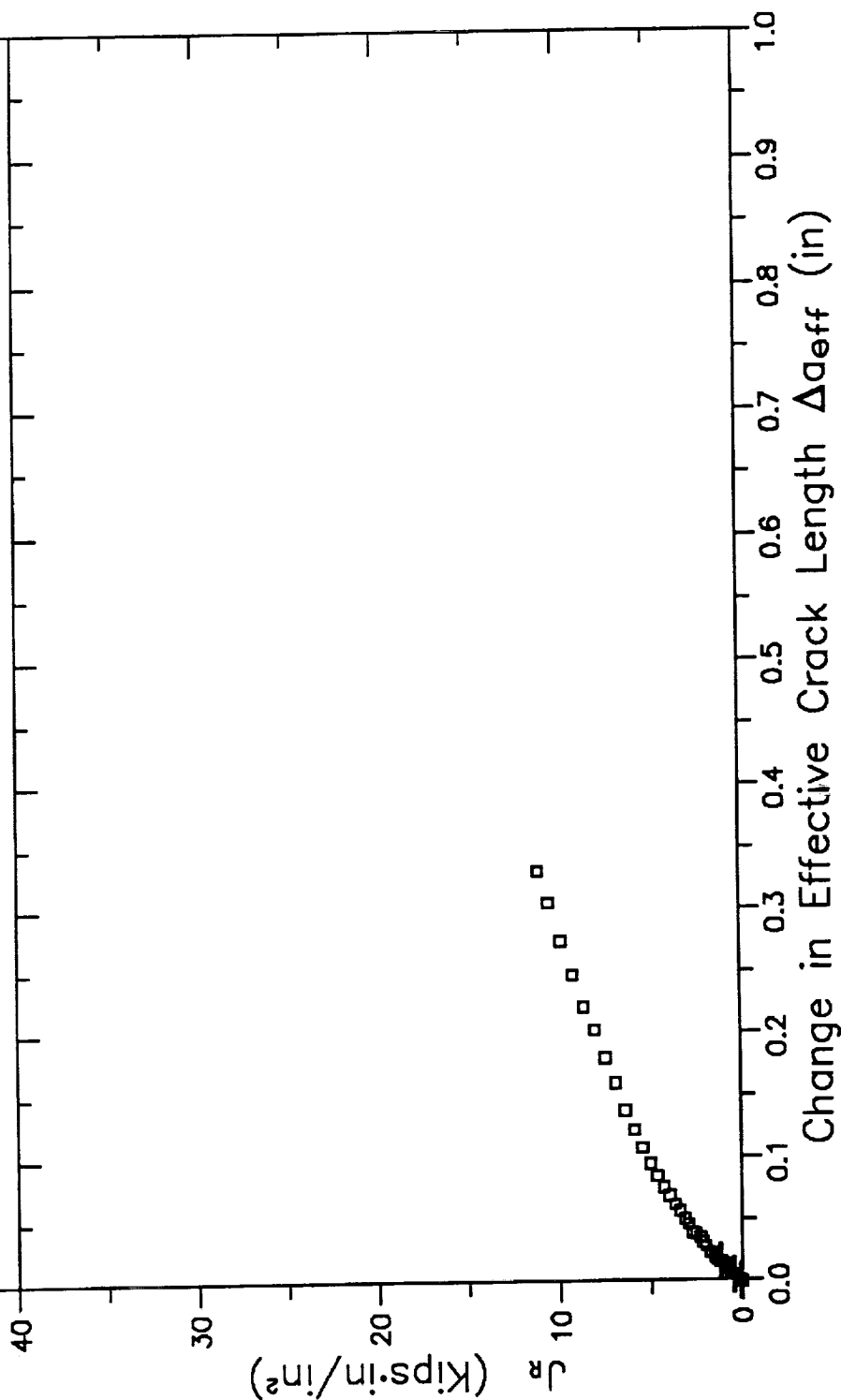


# RESISTANCE CURVE

SA106 GRADE C

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG01  
Environment: Unknown; 68°F

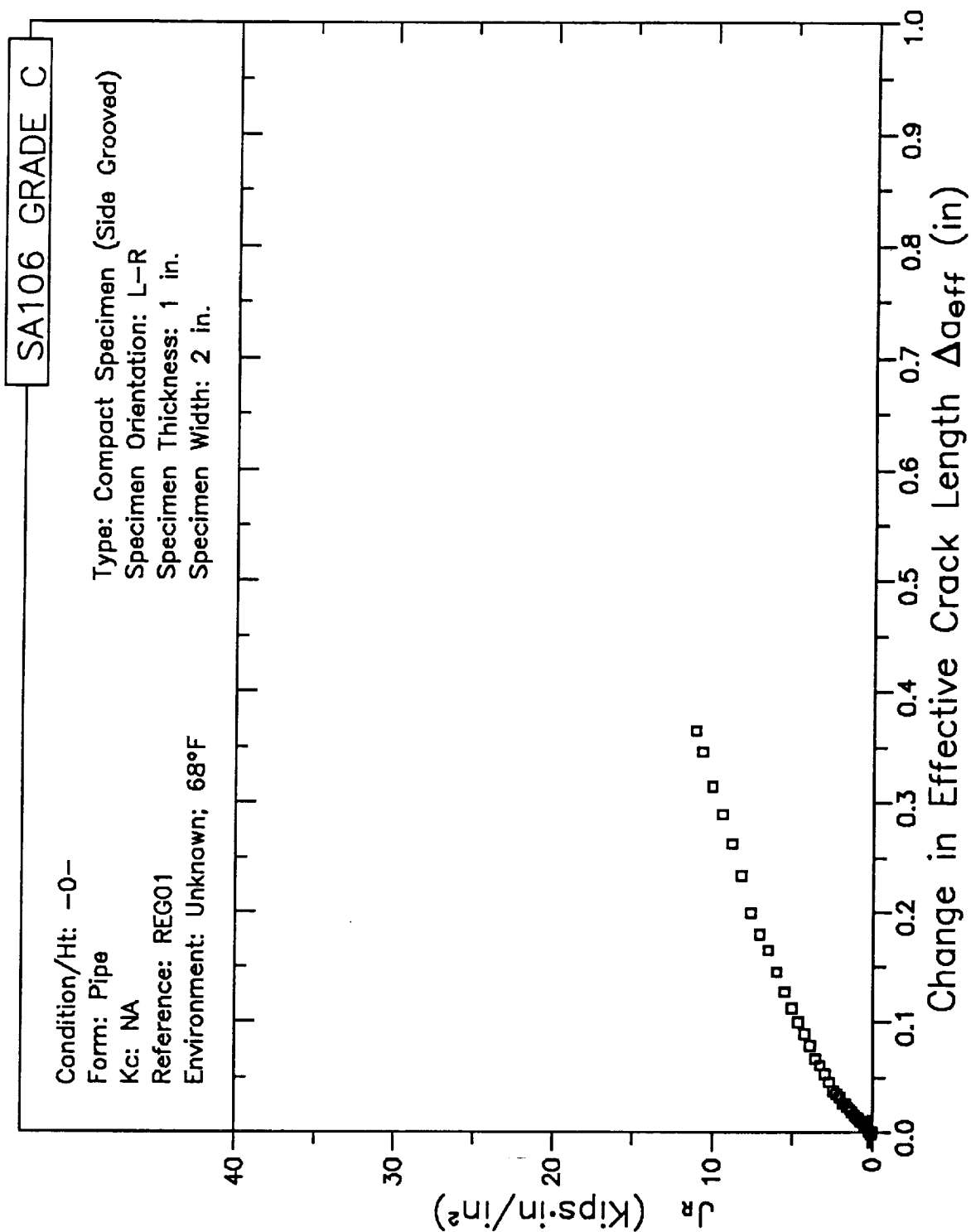
Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-R  
Specimen Thickness: 1 in.  
Specimen Width: 2 in.



B3-502

C-12.

# RESISTANCE CURVE

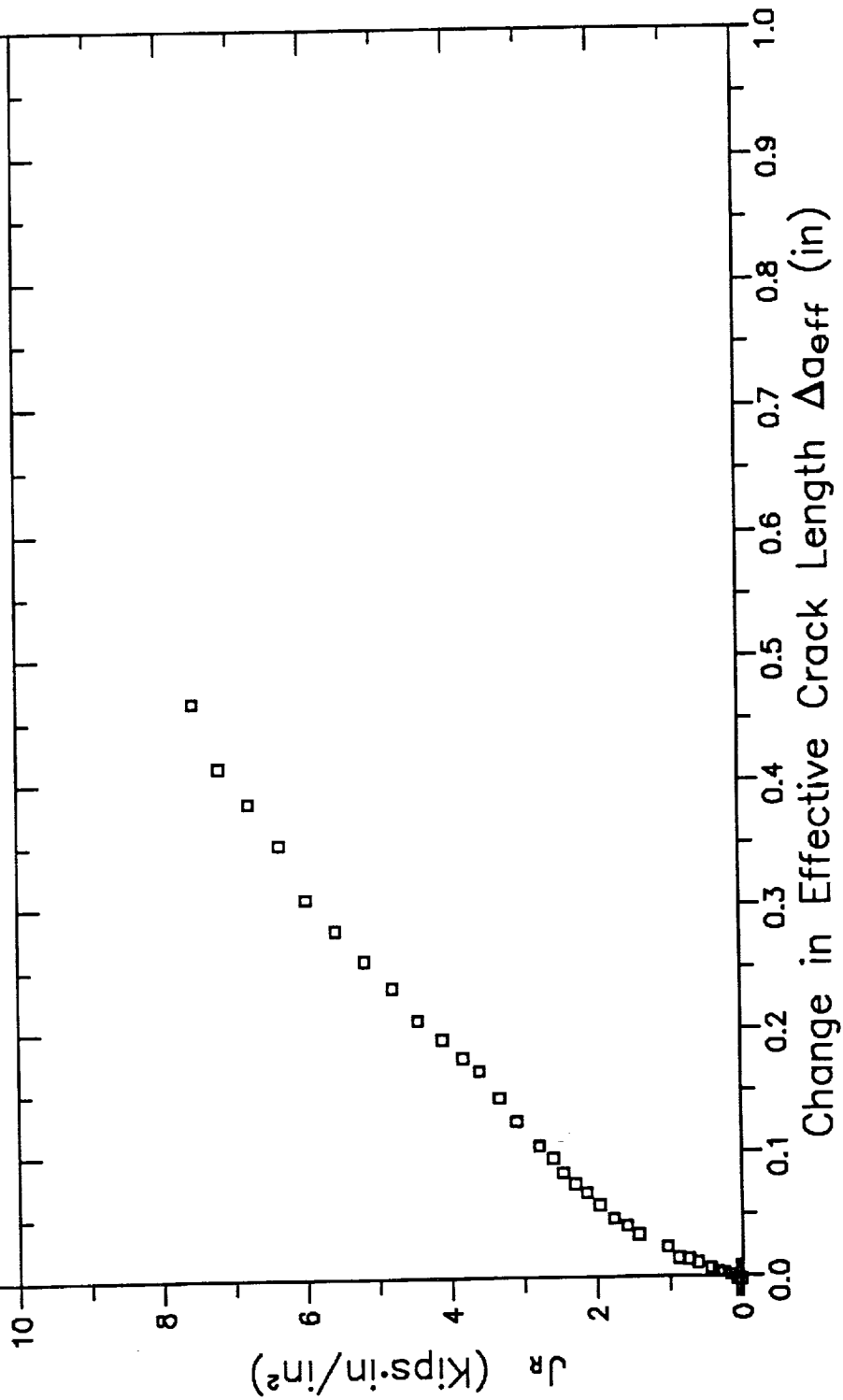


# RESISTANCE CURVE

SA106 GRADE C

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG01  
Environment: Unknown; 68°F

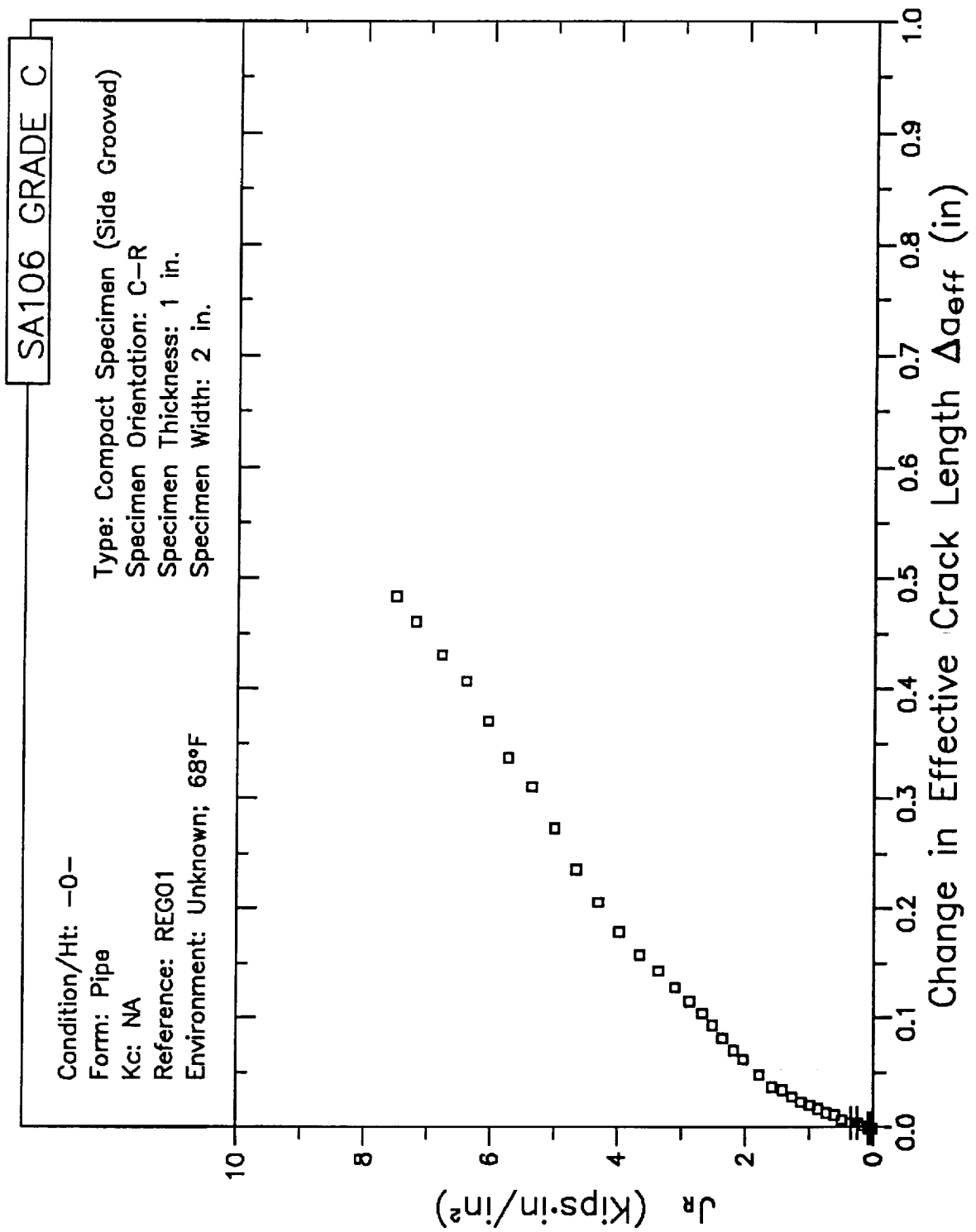
Type: Compact Specimen (Side Grooved)  
Specimen Orientation: C-R  
Specimen Thickness: 1 in.  
Specimen Width: 2 in.



B3-504



# RESISTANCE CURVE



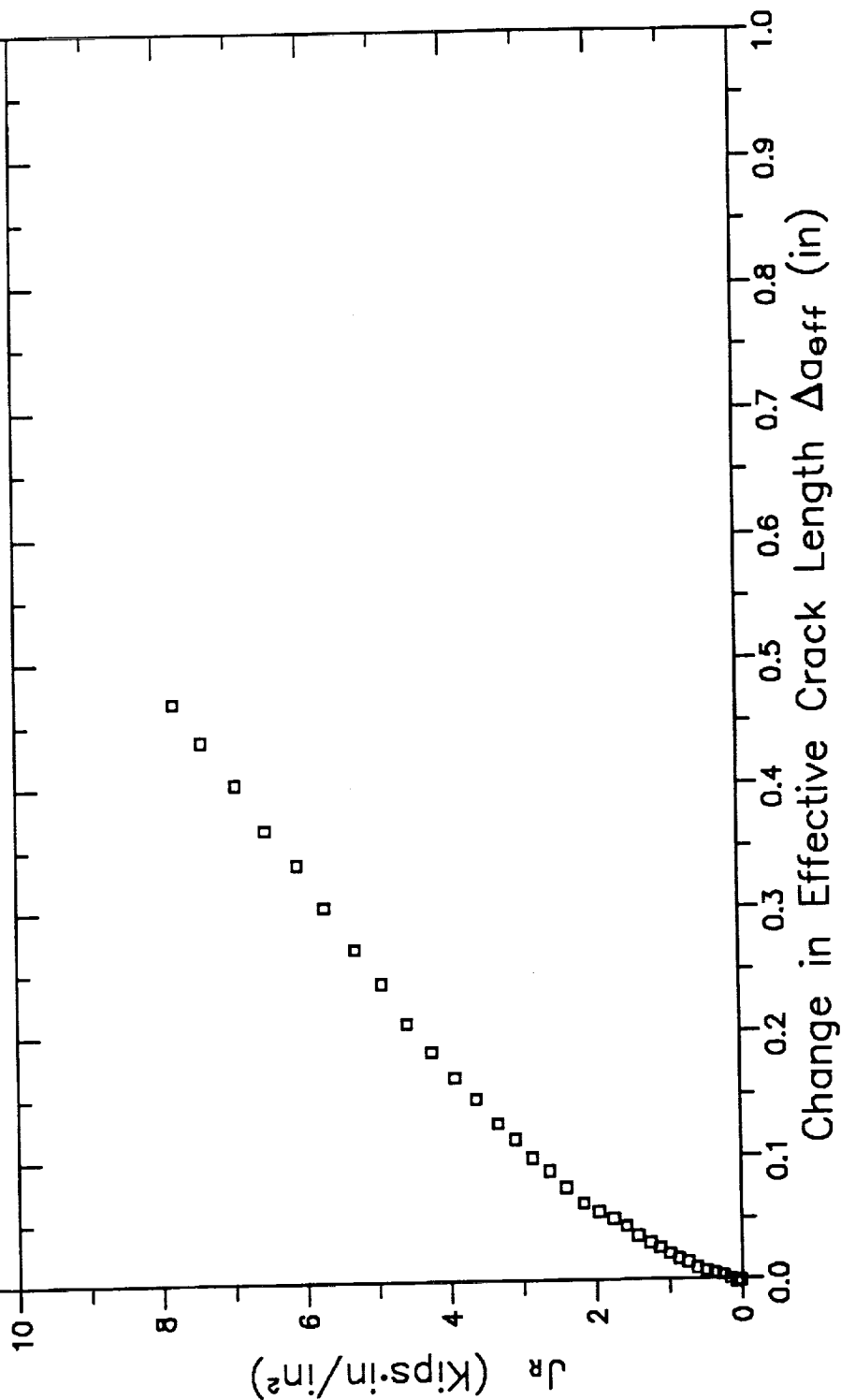
B3-505

# RESISTANCE CURVE

SA106 GRADE C

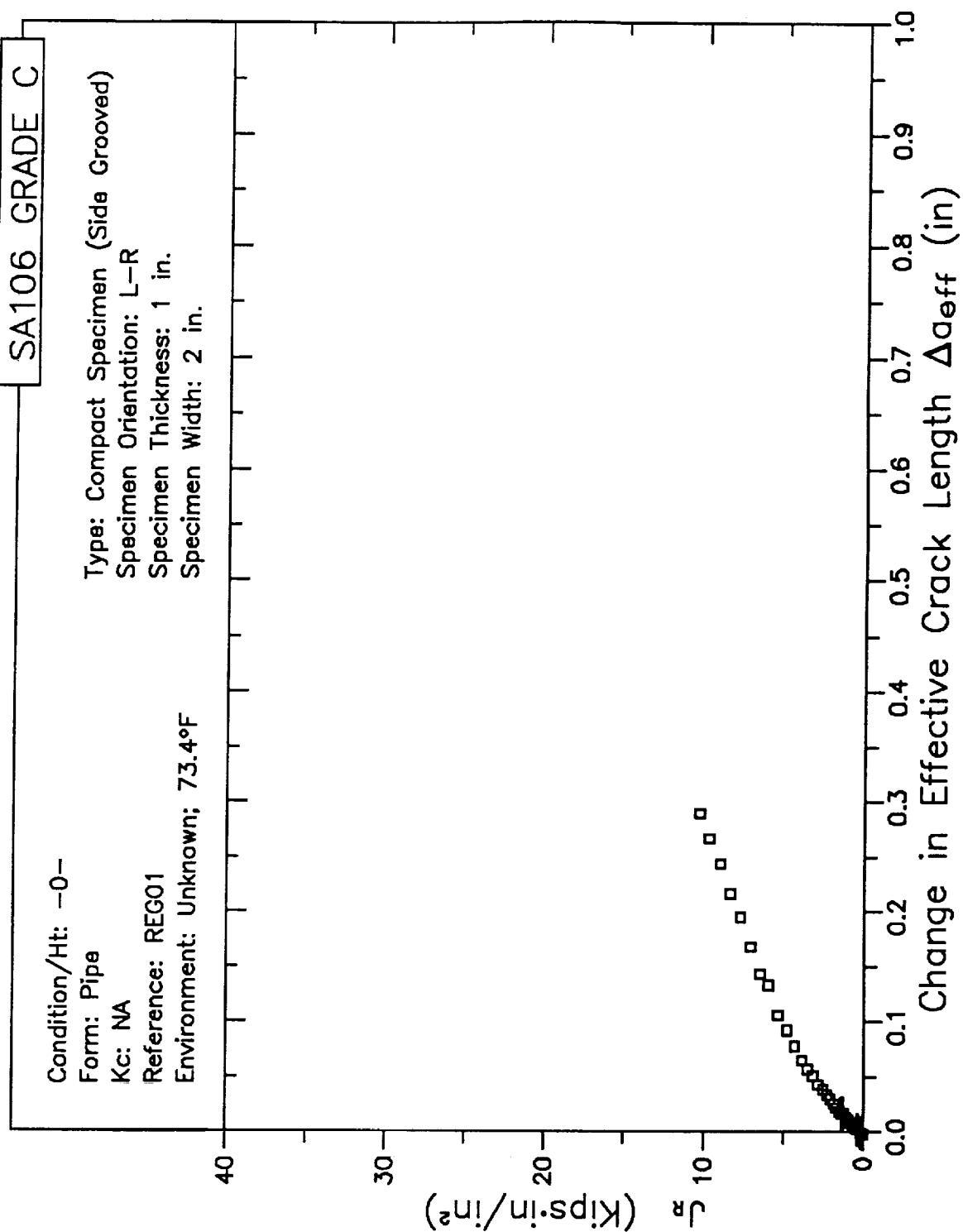
Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG01  
Environment: Unknown; 68°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: C-R  
Specimen Thickness: 1 in.  
Specimen Width: 2 in.

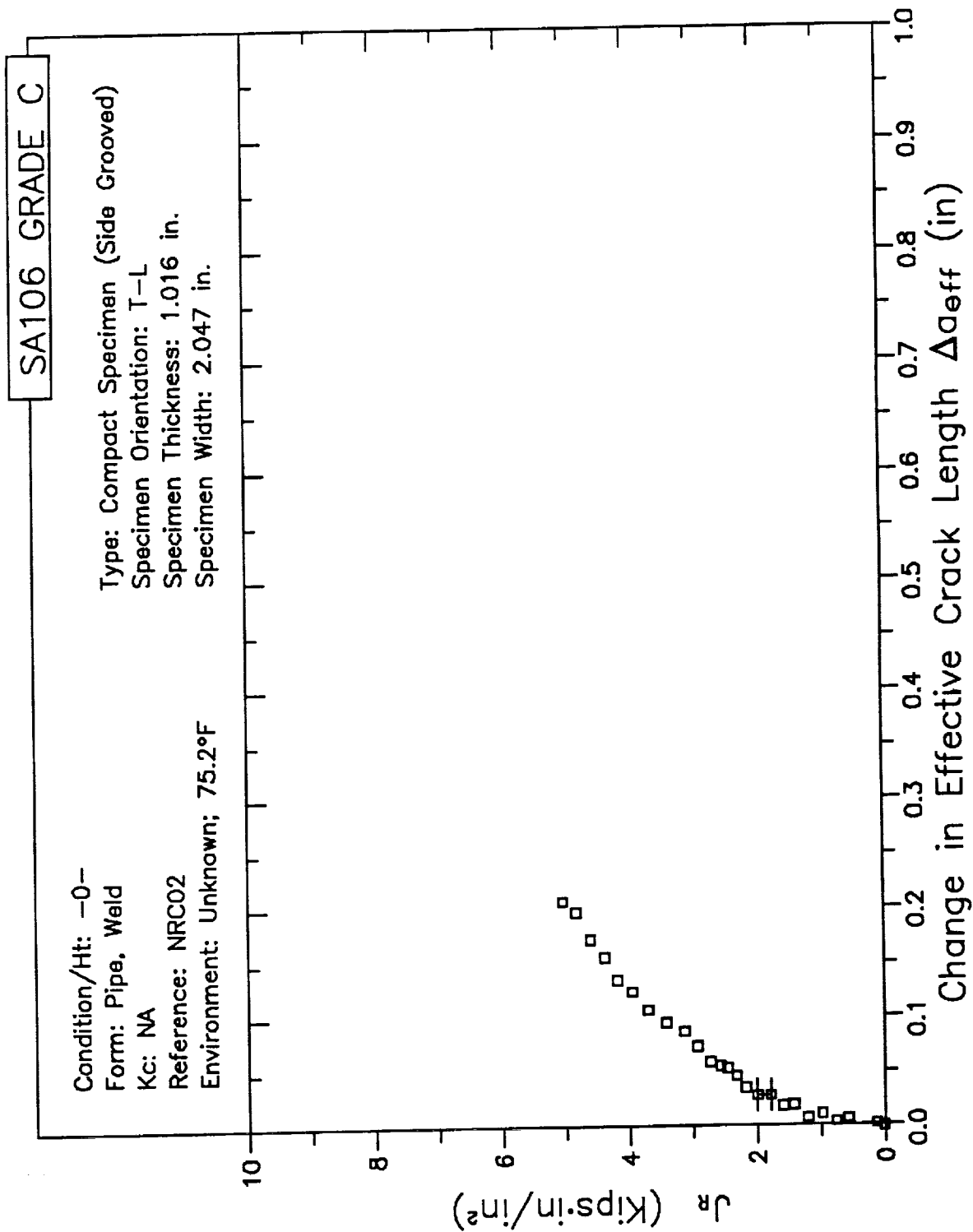


B3-506

# RESISTANCE CURVE

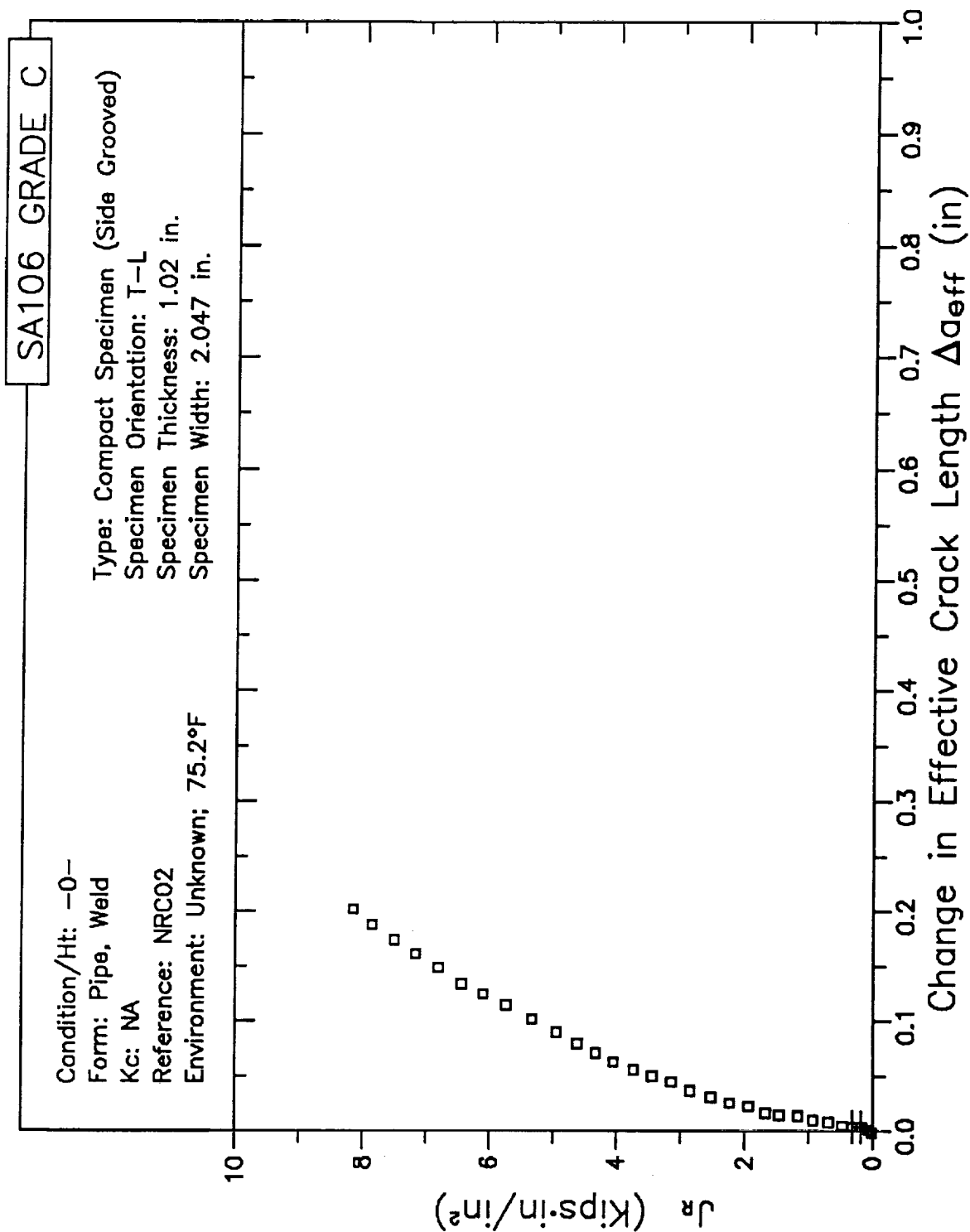


# RESISTANCE CURVE

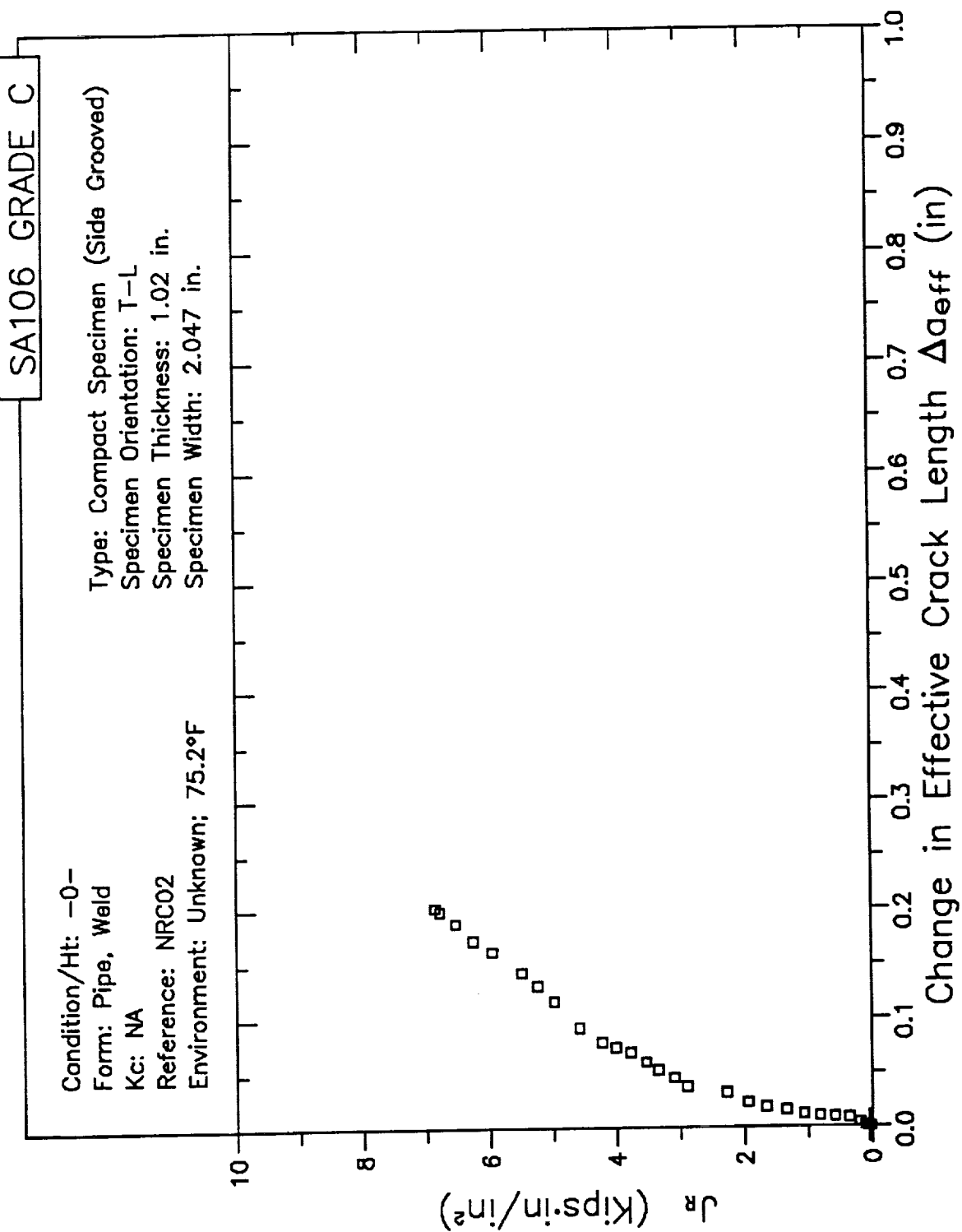


B3-508

# RESISTANCE CURVE

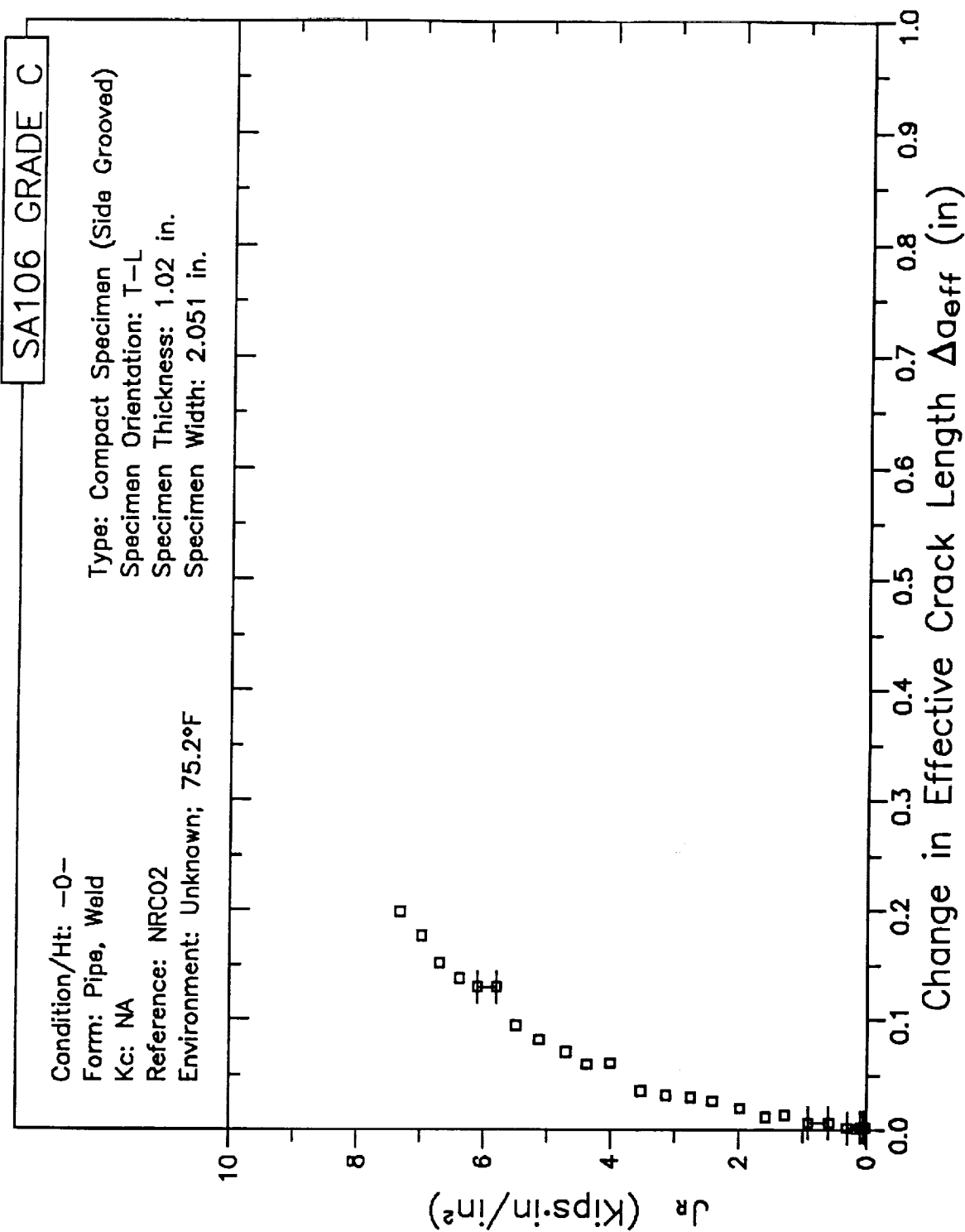


# RESISTANCE CURVE



B3-510

# RESISTANCE CURVE

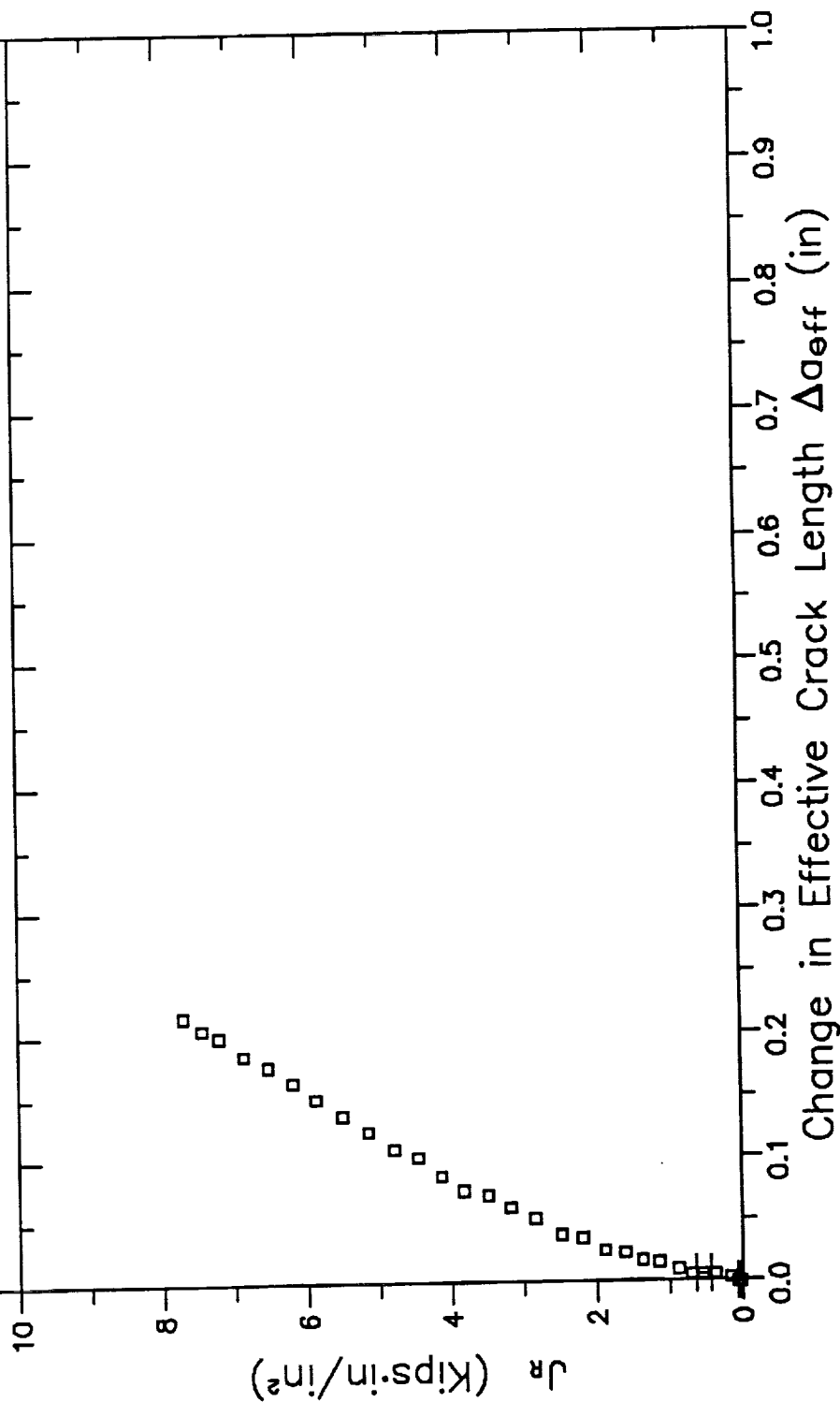


# RESISTANCE CURVE

SA106 GRADE C

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: NRC02  
Environment: Unknown; 75.2°F

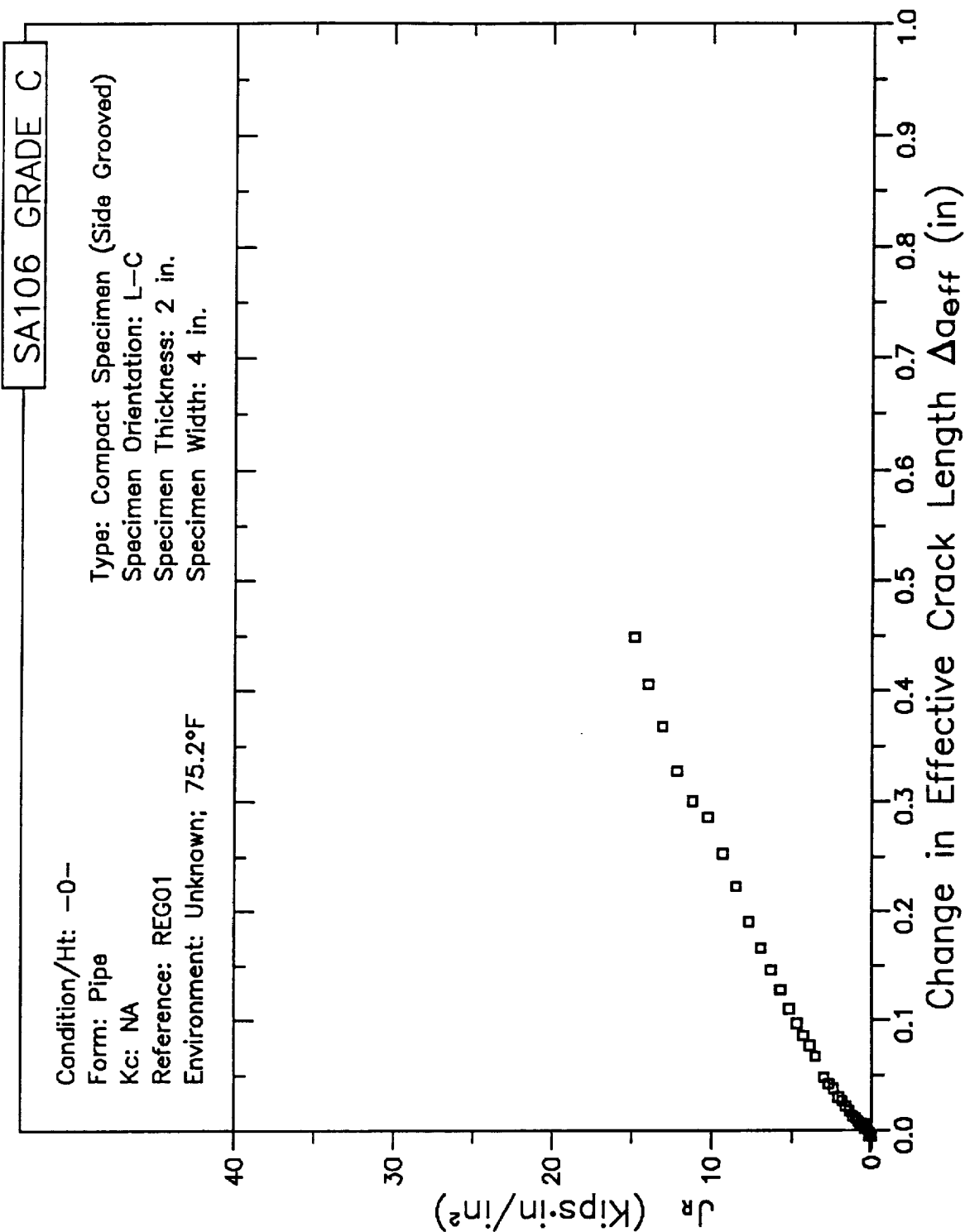
Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 1 in.  
Specimen Width: 2 in.



B3-512



# RESISTANCE CURVE

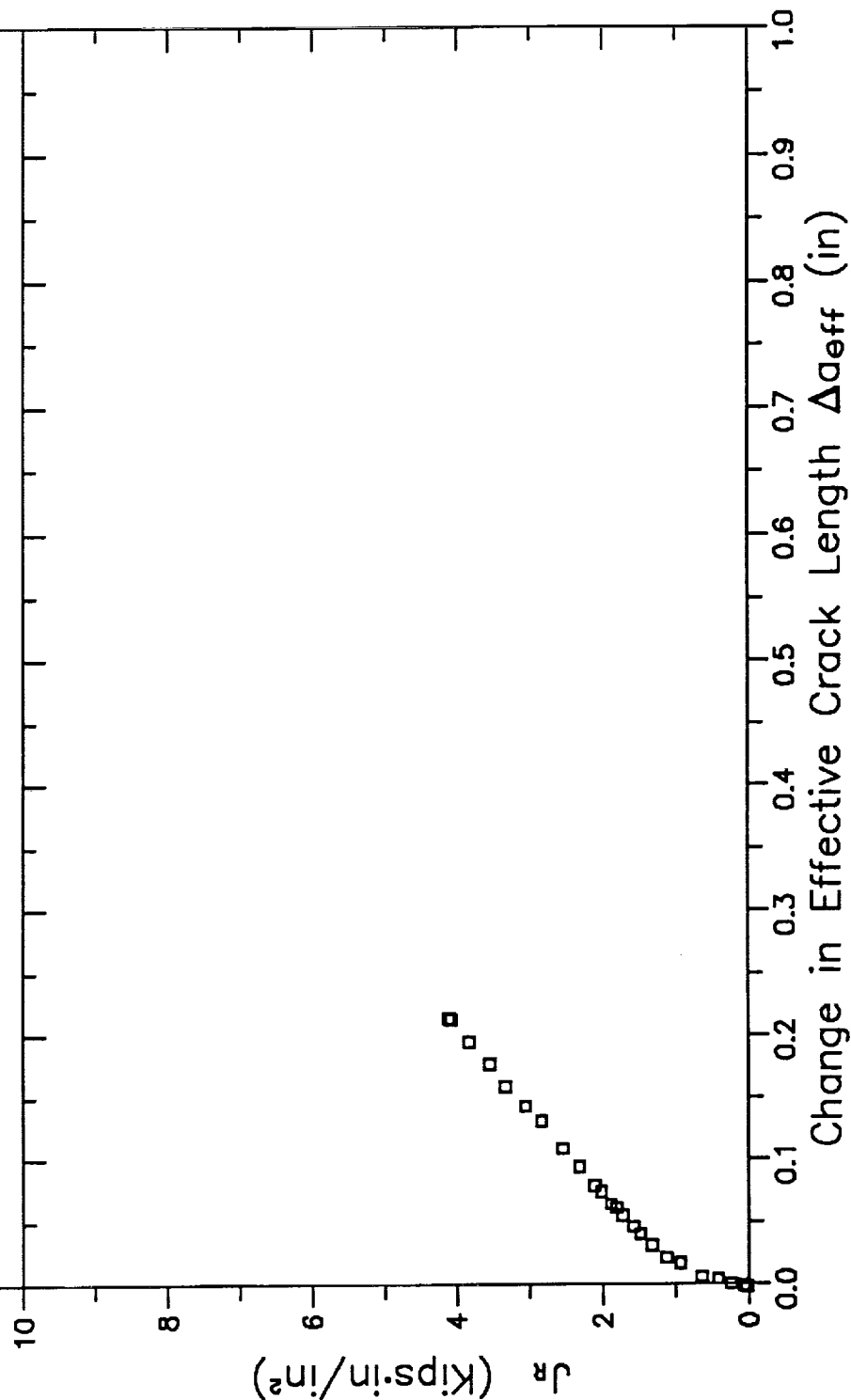


# RESISTANCE CURVE

SA106 GRADE C

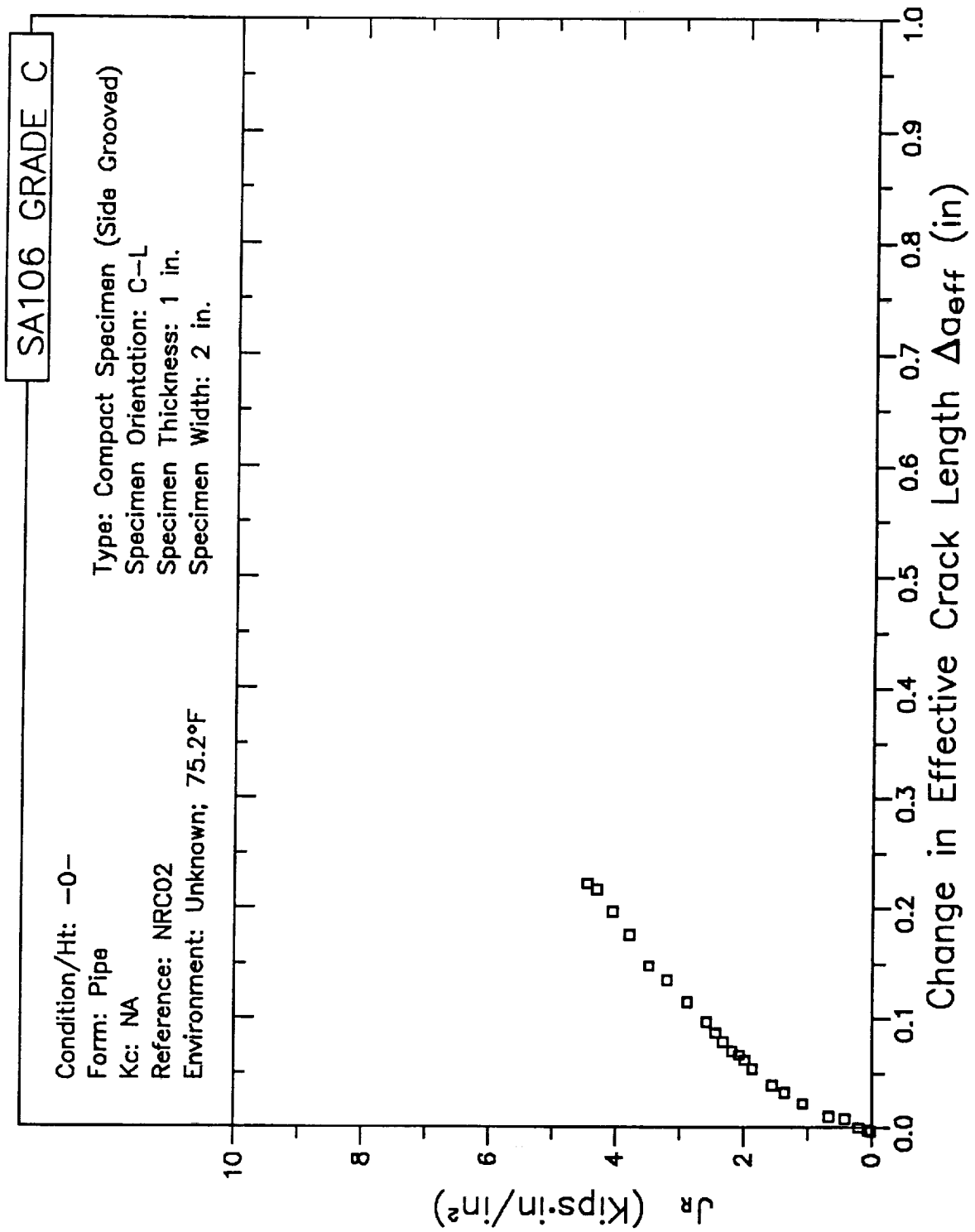
Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: NRC02  
Environment: Unknown; 75.2°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: C-L  
Specimen Thickness: 1 in.  
Specimen Width: 1.996 in.



B3-514

# RESISTANCE CURVE



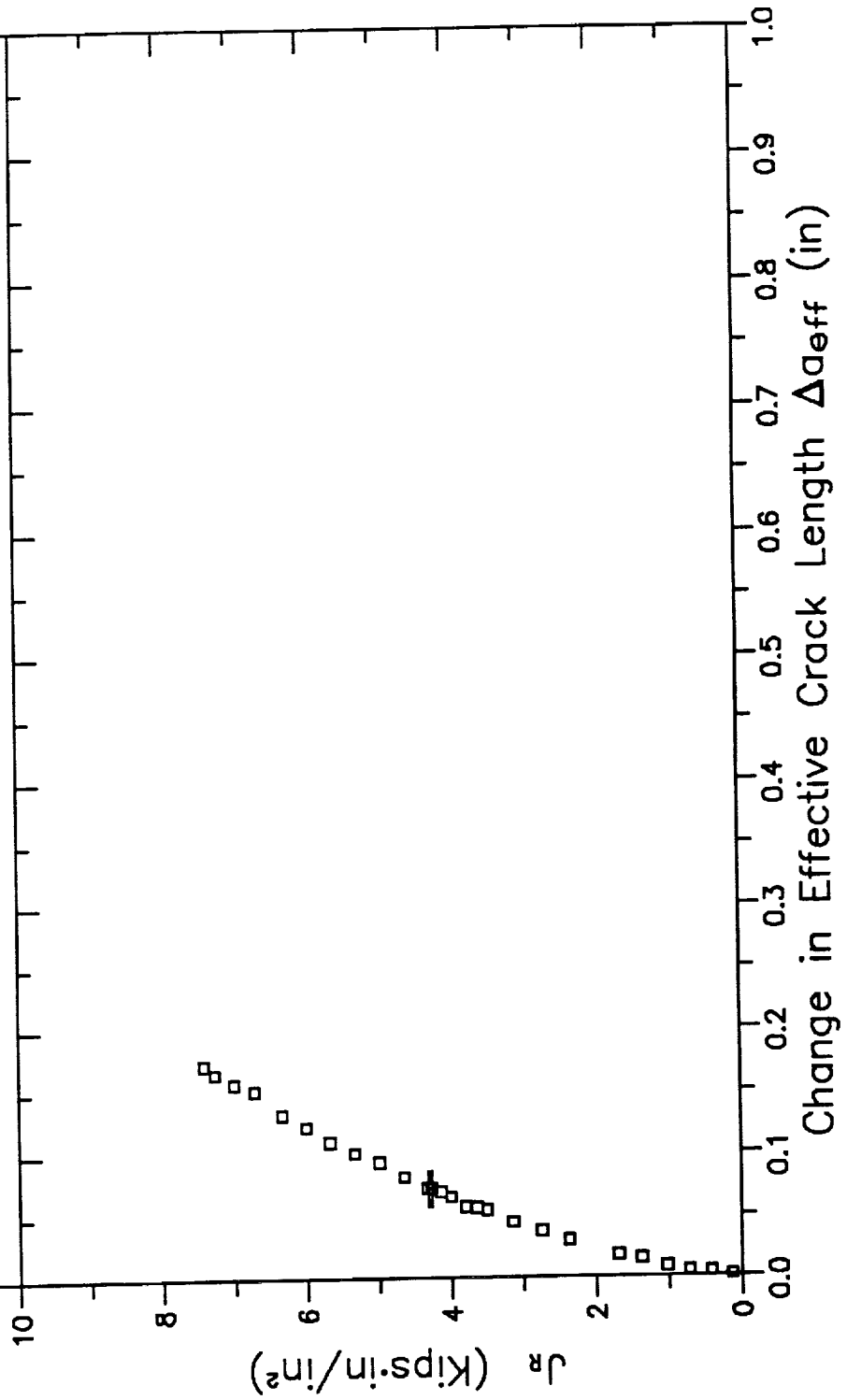
B3-515

# RESISTANCE CURVE

SA106 GRADE C

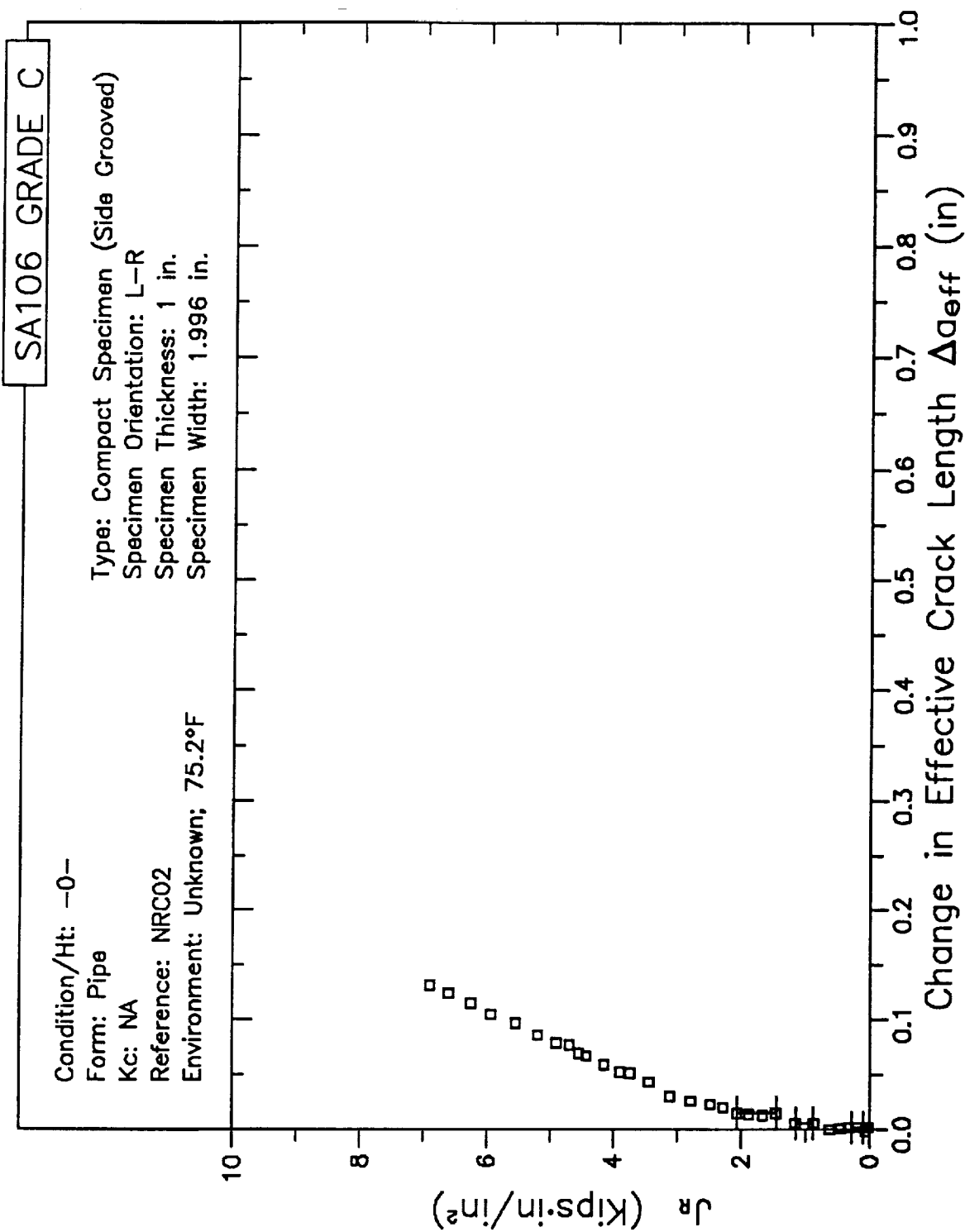
Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: NRC02  
Environment: Unknown; 75.2°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-R  
Specimen Thickness: 1 in.  
Specimen Width: 1.996 in.



B3-516

# RESISTANCE CURVE

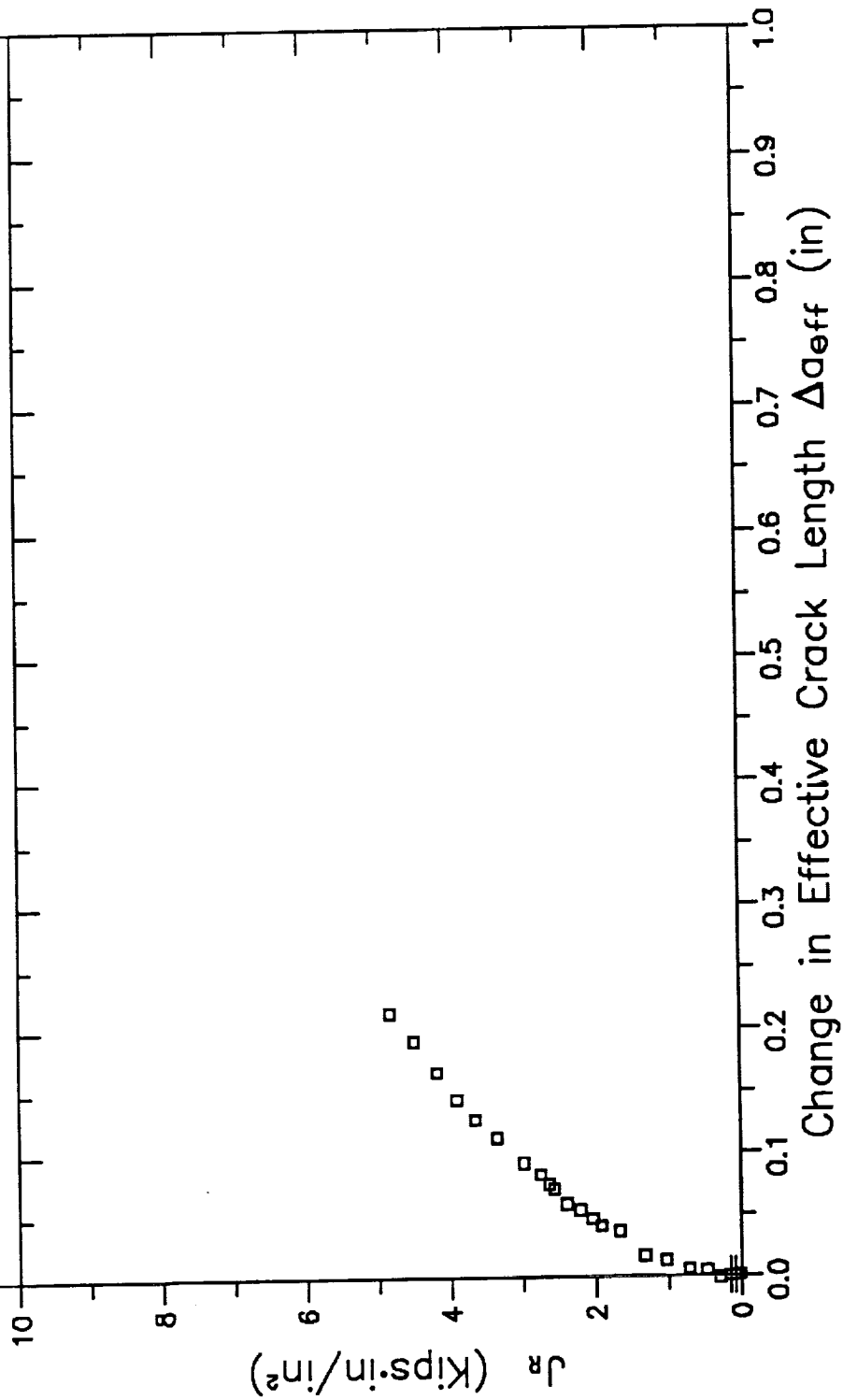


# RESISTANCE CURVE

SA106 GRADE C

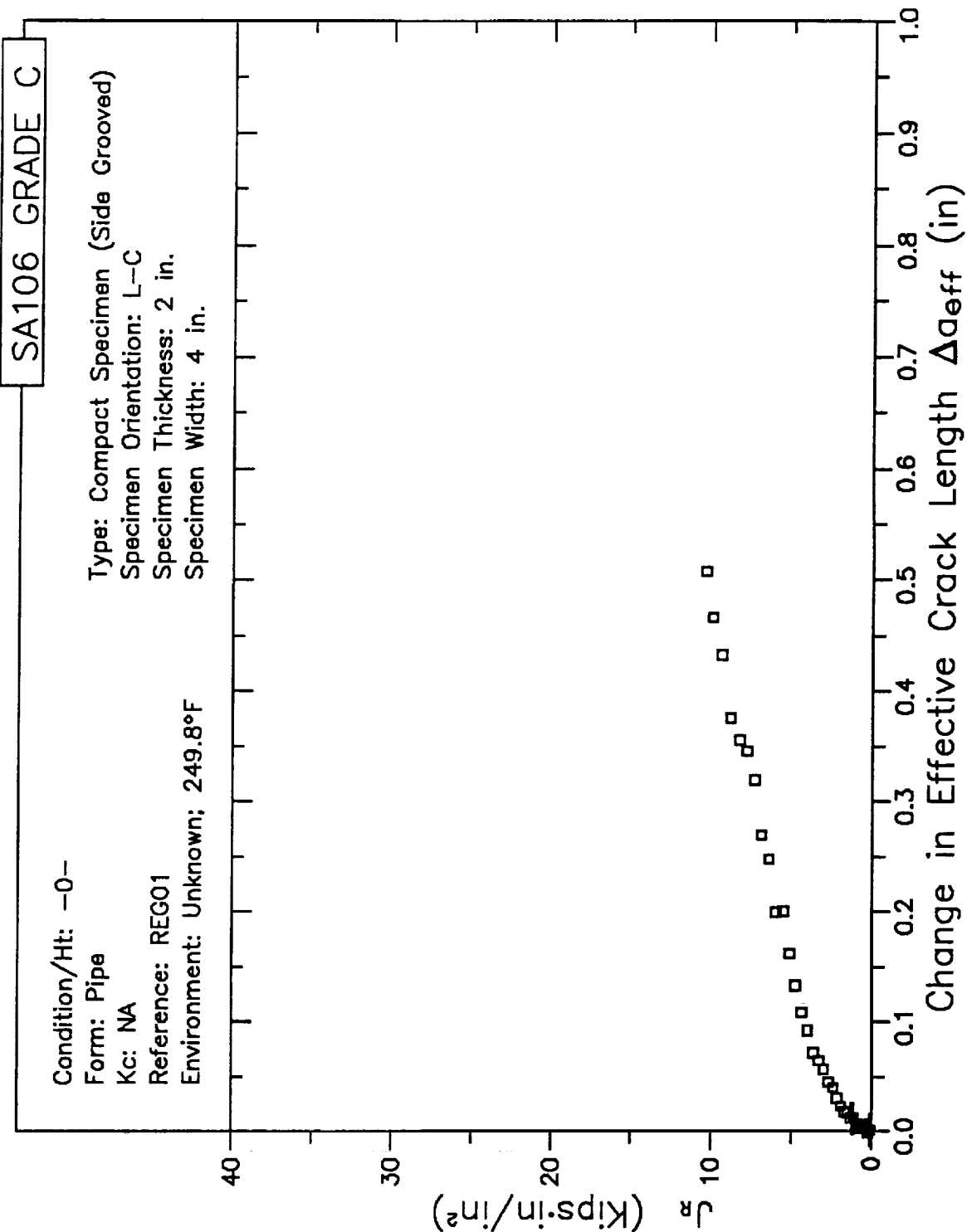
Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: NRC02  
Environment: Unknown; 75.2°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: C-R  
Specimen Thickness: 1 in.  
Specimen Width: 1.996 in.



B3-518

# RESISTANCE CURVE

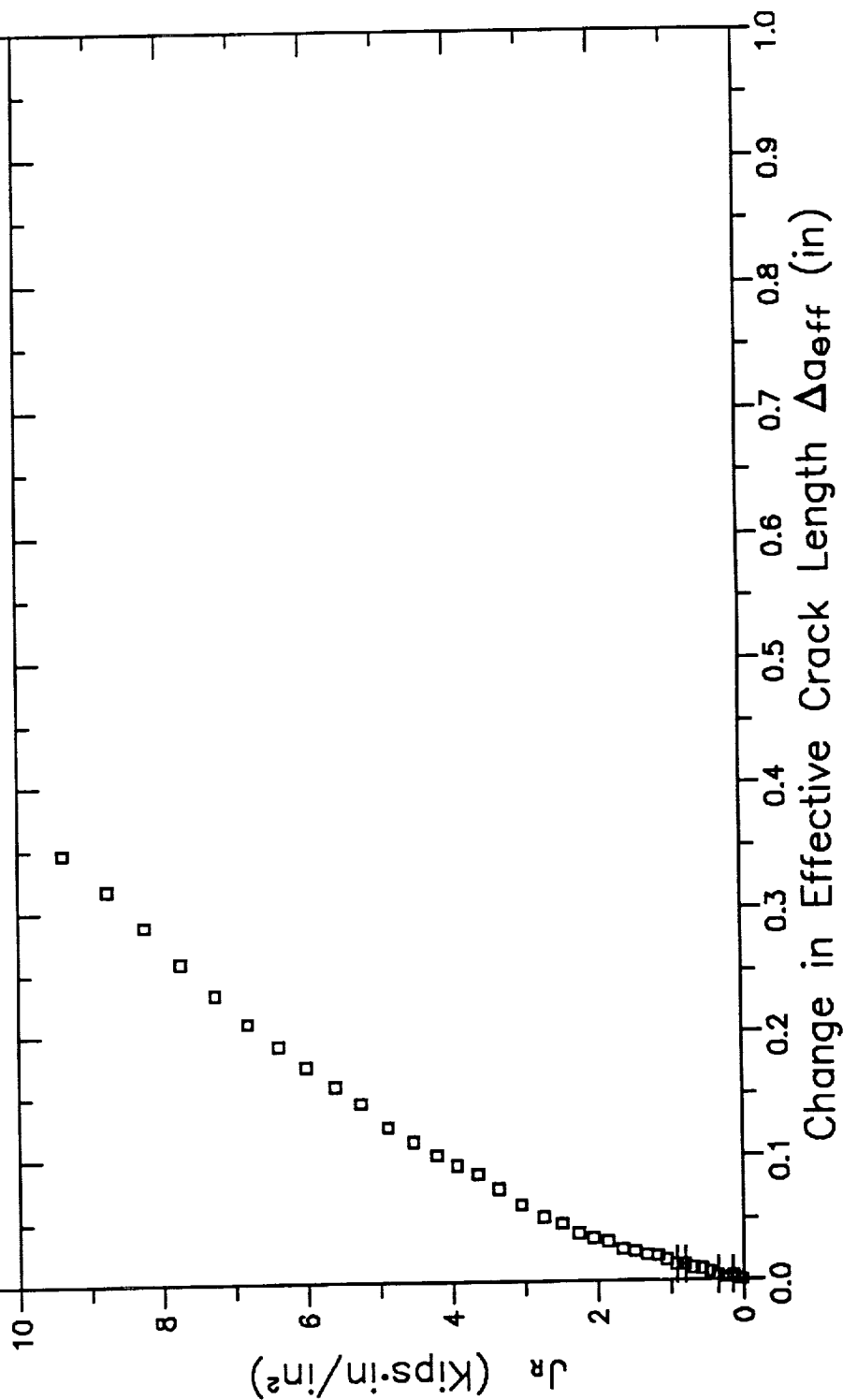


# RESISTANCE CURVE

SA106 GRADE C

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG01  
Environment: Unknown; 249.8°F

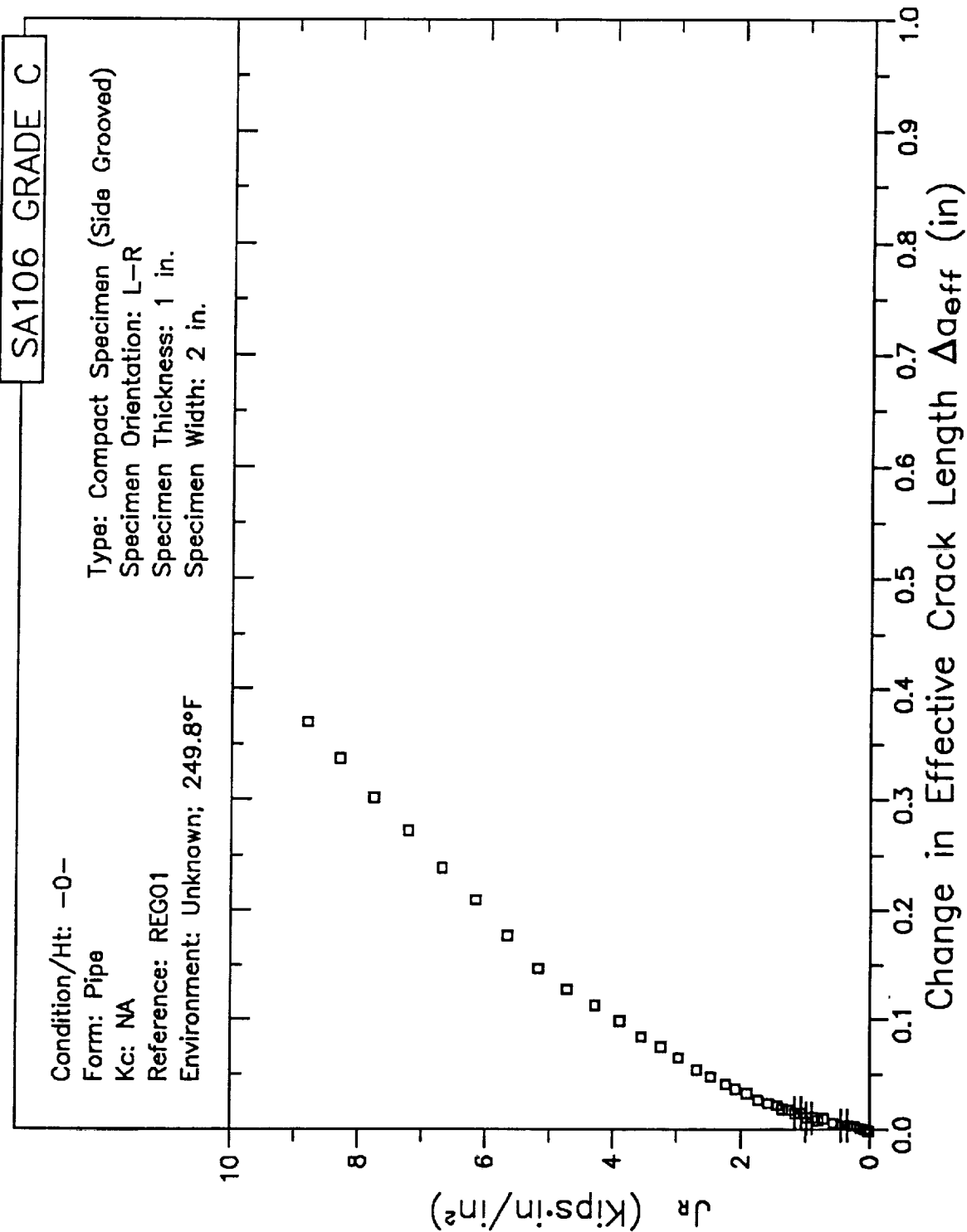
Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-R  
Specimen Thickness: 1 in.  
Specimen Width: 2 in.



B3-520



# RESISTANCE CURVE

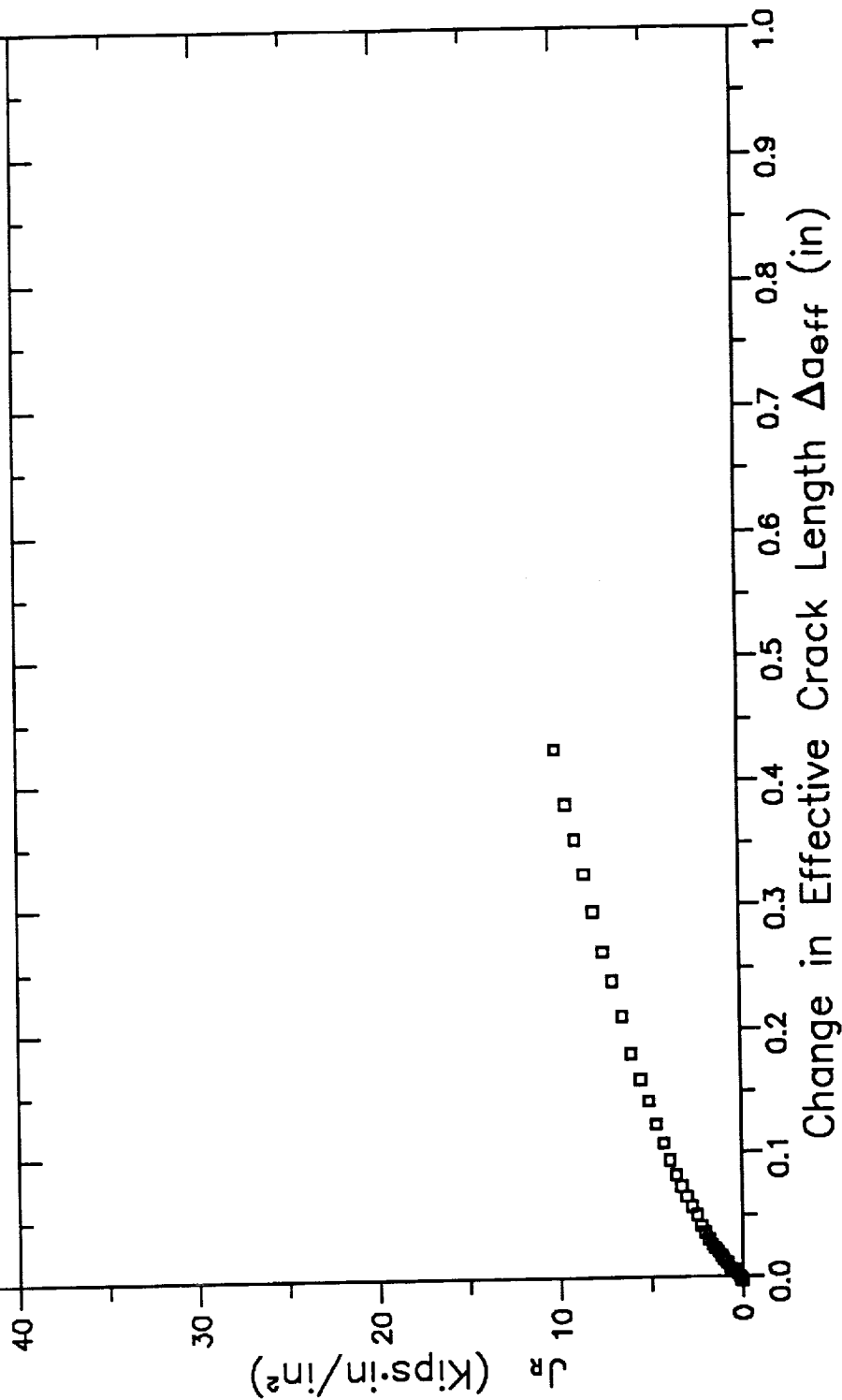


# RESISTANCE CURVE

SA106 GRADE C

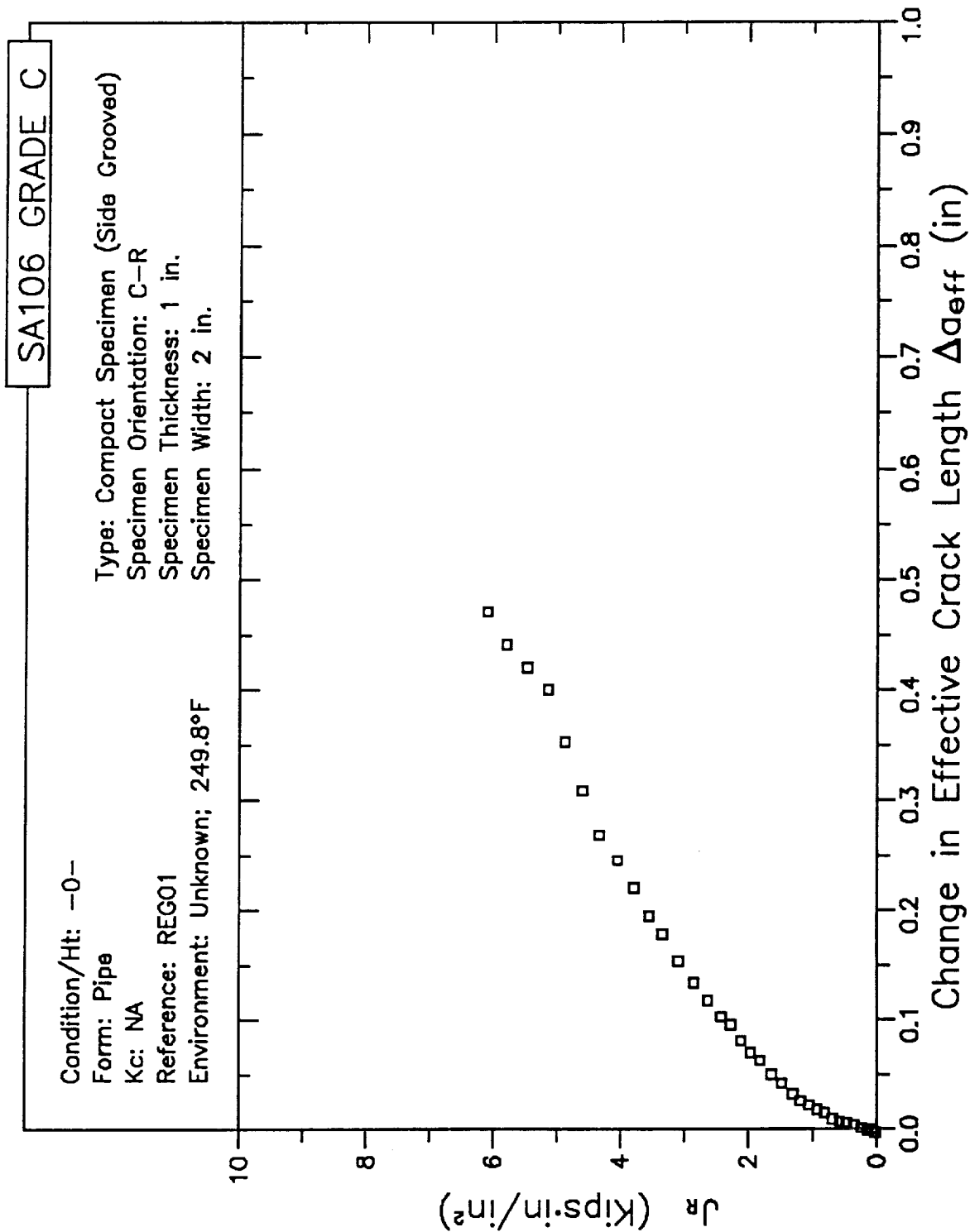
Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG01  
Environment: Unknown; 249.8°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-R  
Specimen Thickness: 1 in.  
Specimen Width: 2 in.

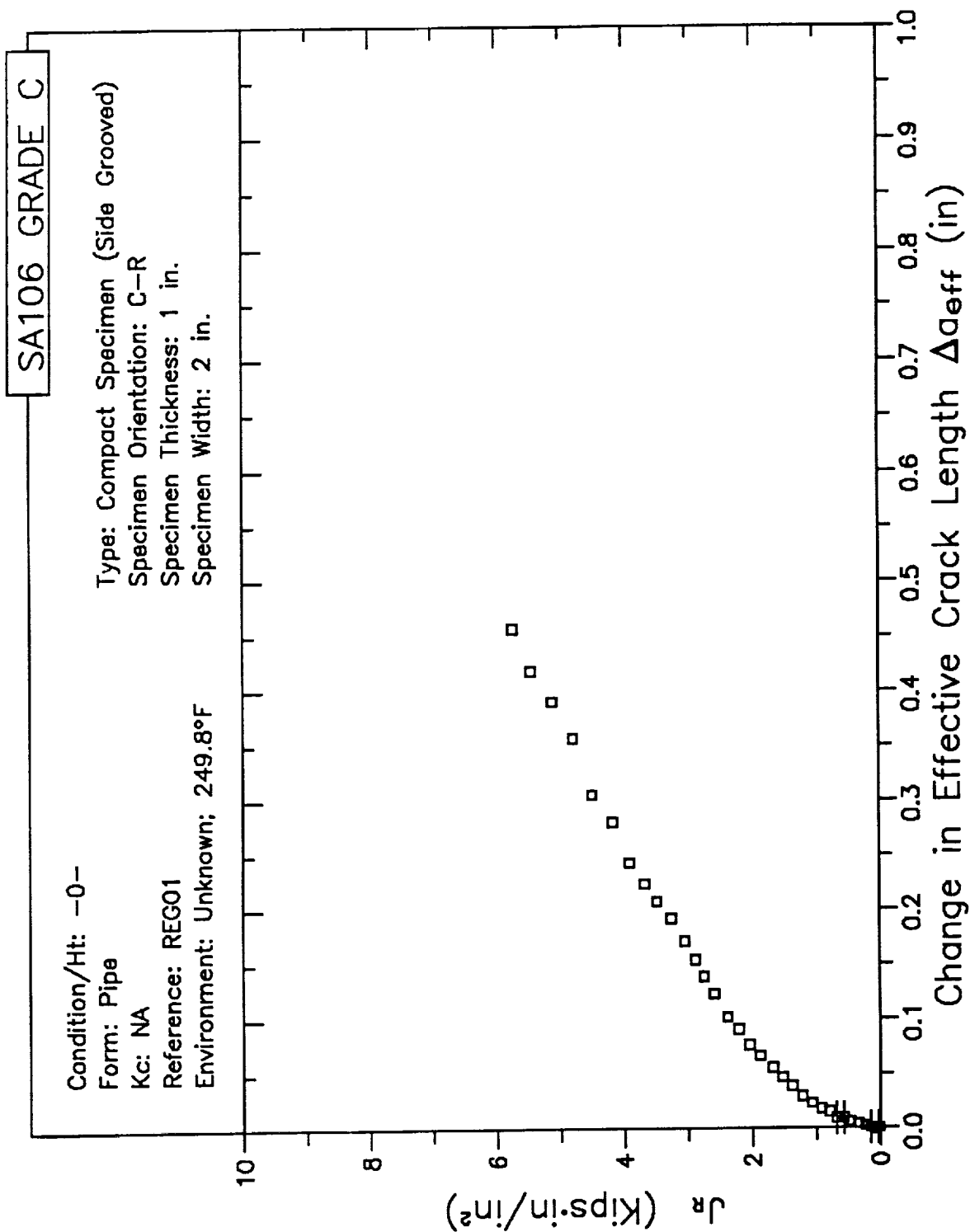


B3-522

# RESISTANCE CURVE

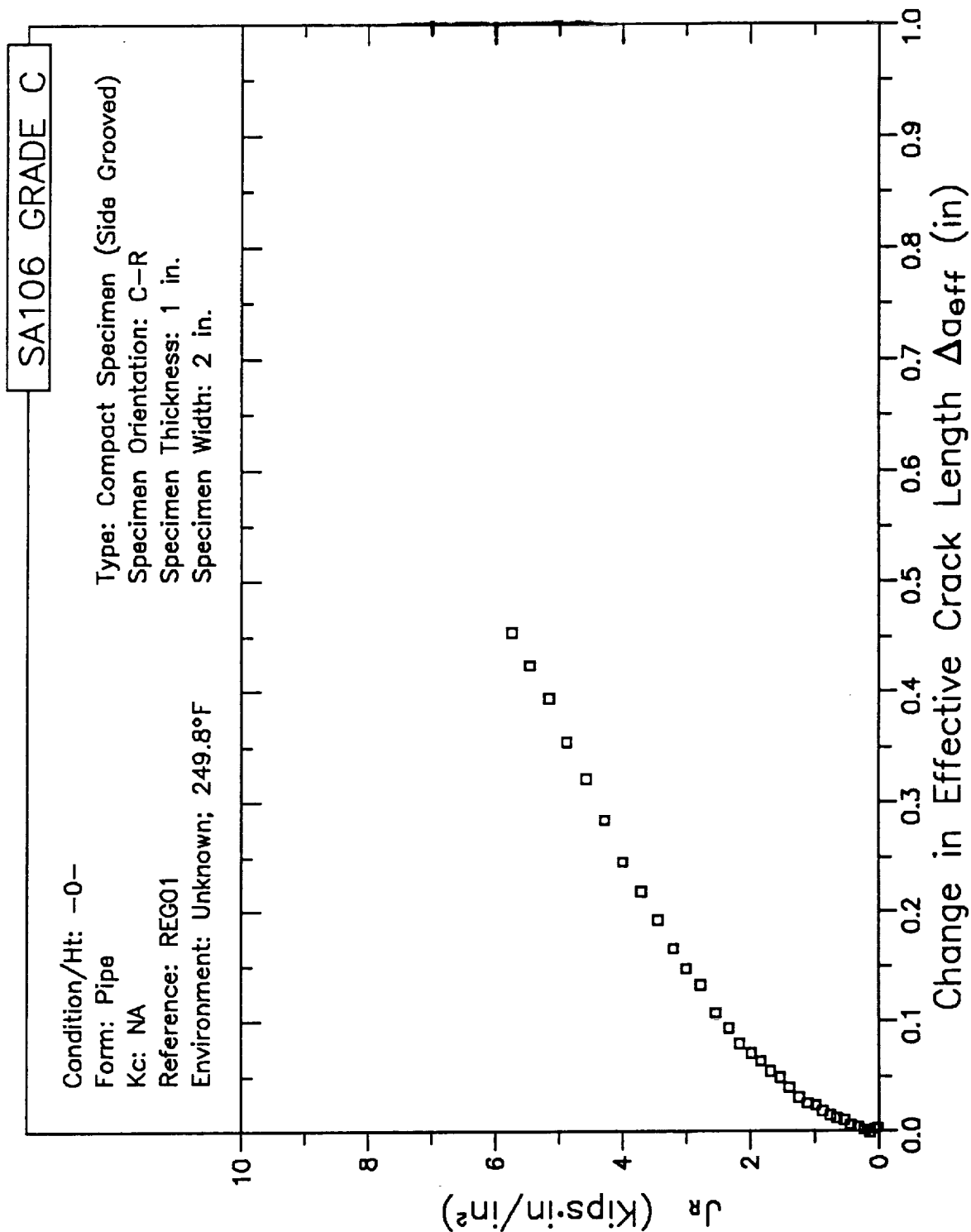


# RESISTANCE CURVE



B3-524

# RESISTANCE CURVE

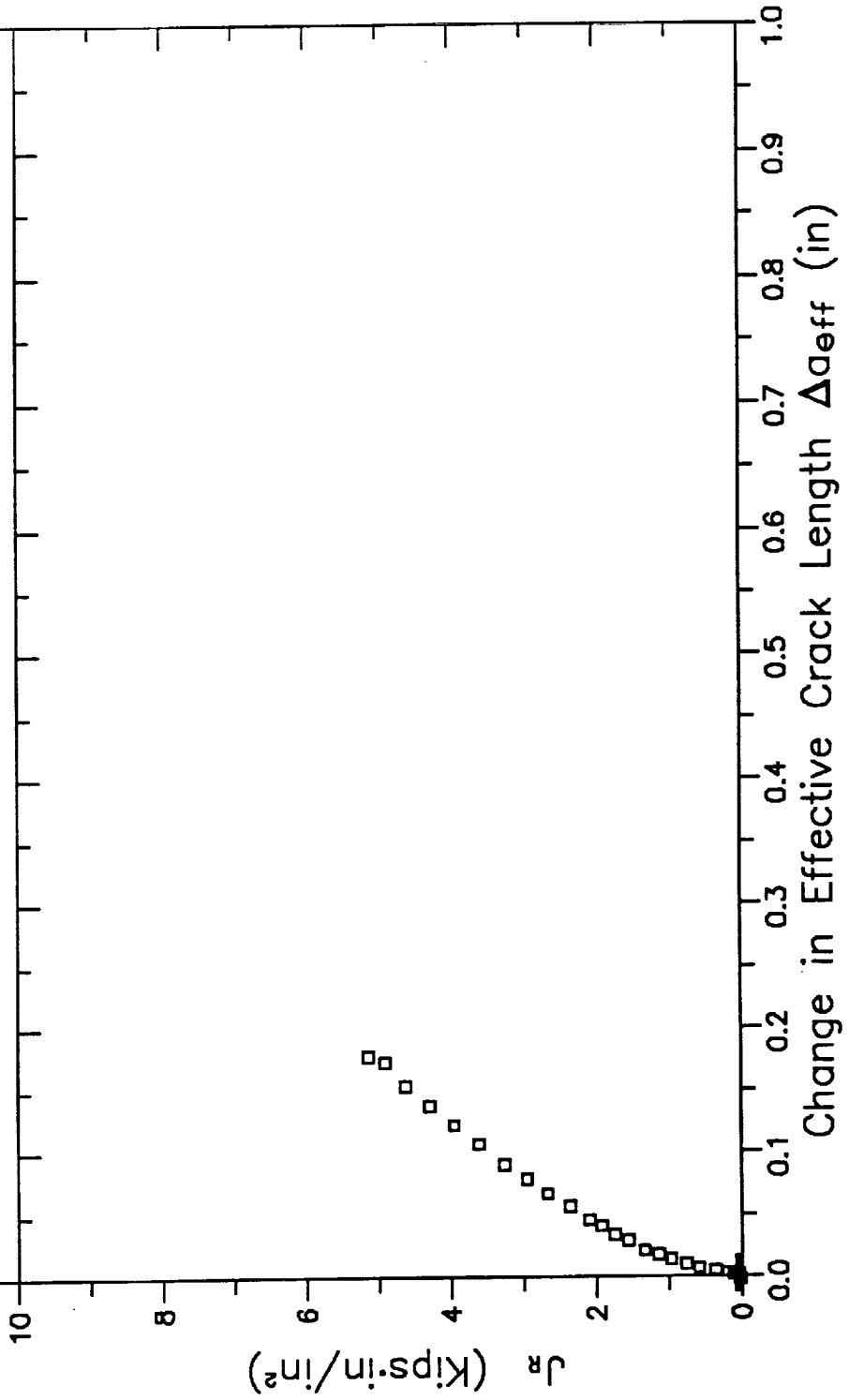


# RESISTANCE CURVE

SA106 GRADE C

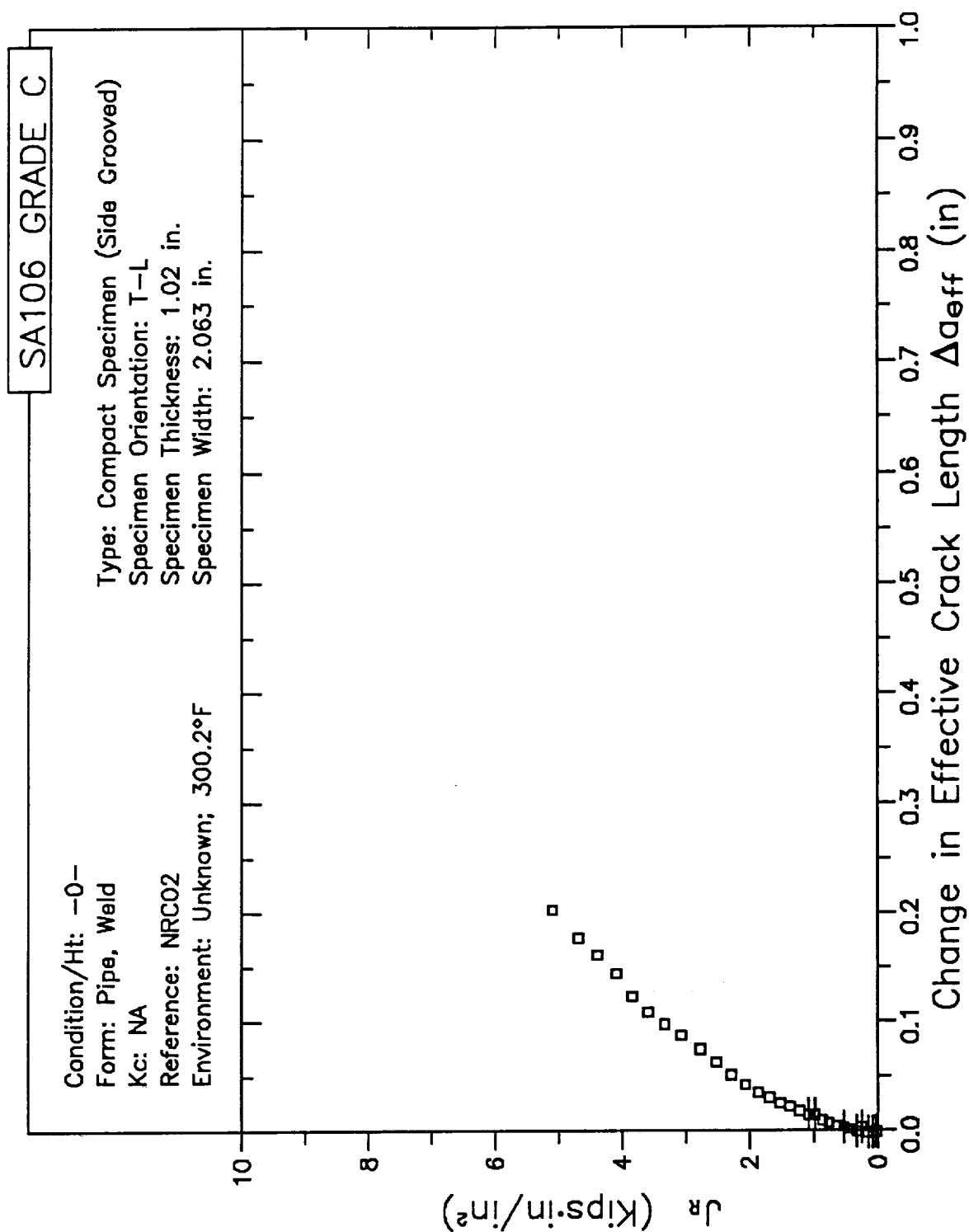
Condition/Ht: -0-  
Form: Pipe, Weld  
Kc: NA  
Reference: NRC02  
Environment: Unknown; 300.2°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: T-L  
Specimen Thickness: 1.02 in.  
Specimen Width: 2.051 in.



B3-526

# RESISTANCE CURVE

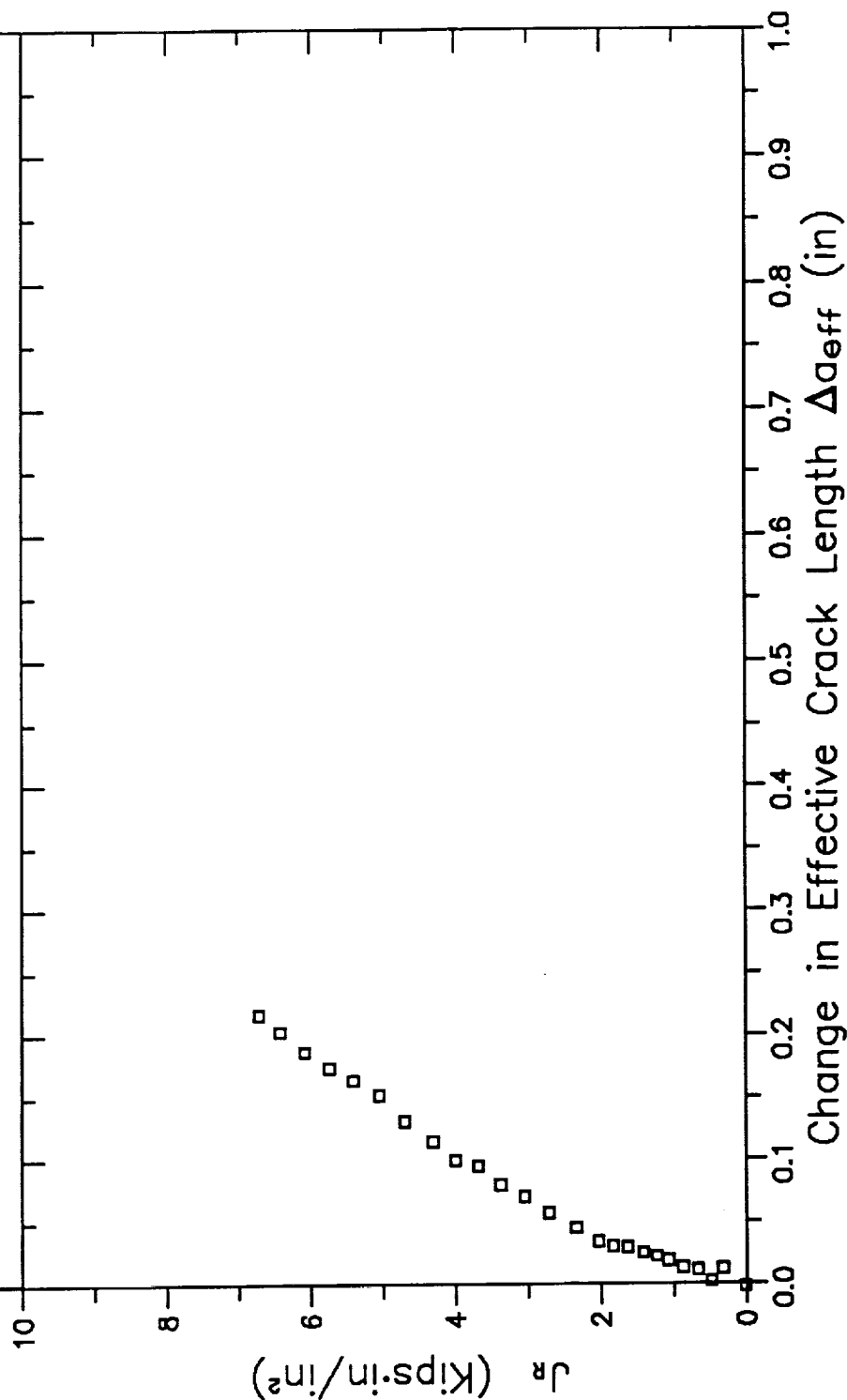


# RESISTANCE CURVE

SA106 GRADE C

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: NRC02  
Environment: Unknown; 300.2°F

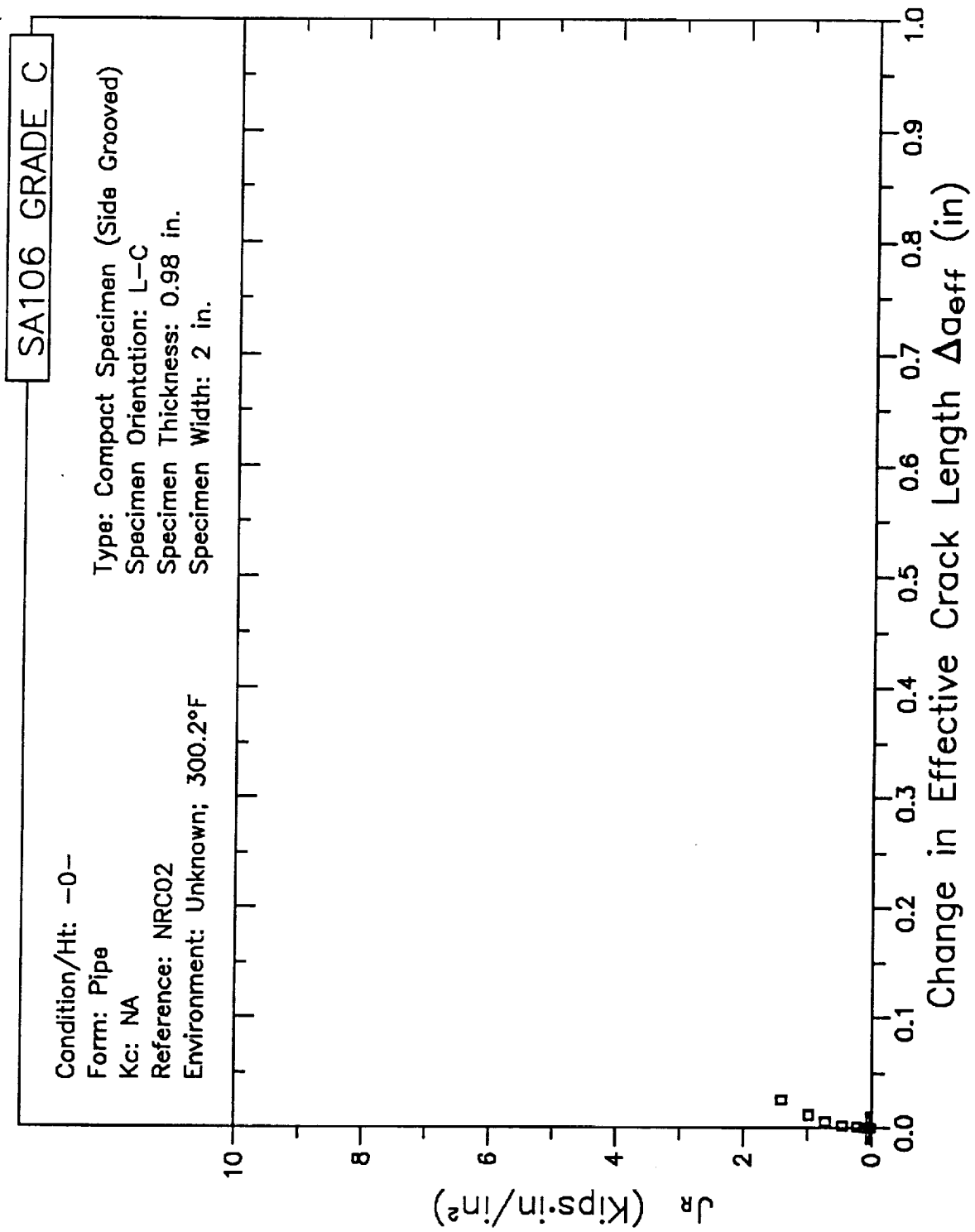
Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 0.972 in.  
Specimen Width: 1.996 in.



B3-528



# RESISTANCE CURVE

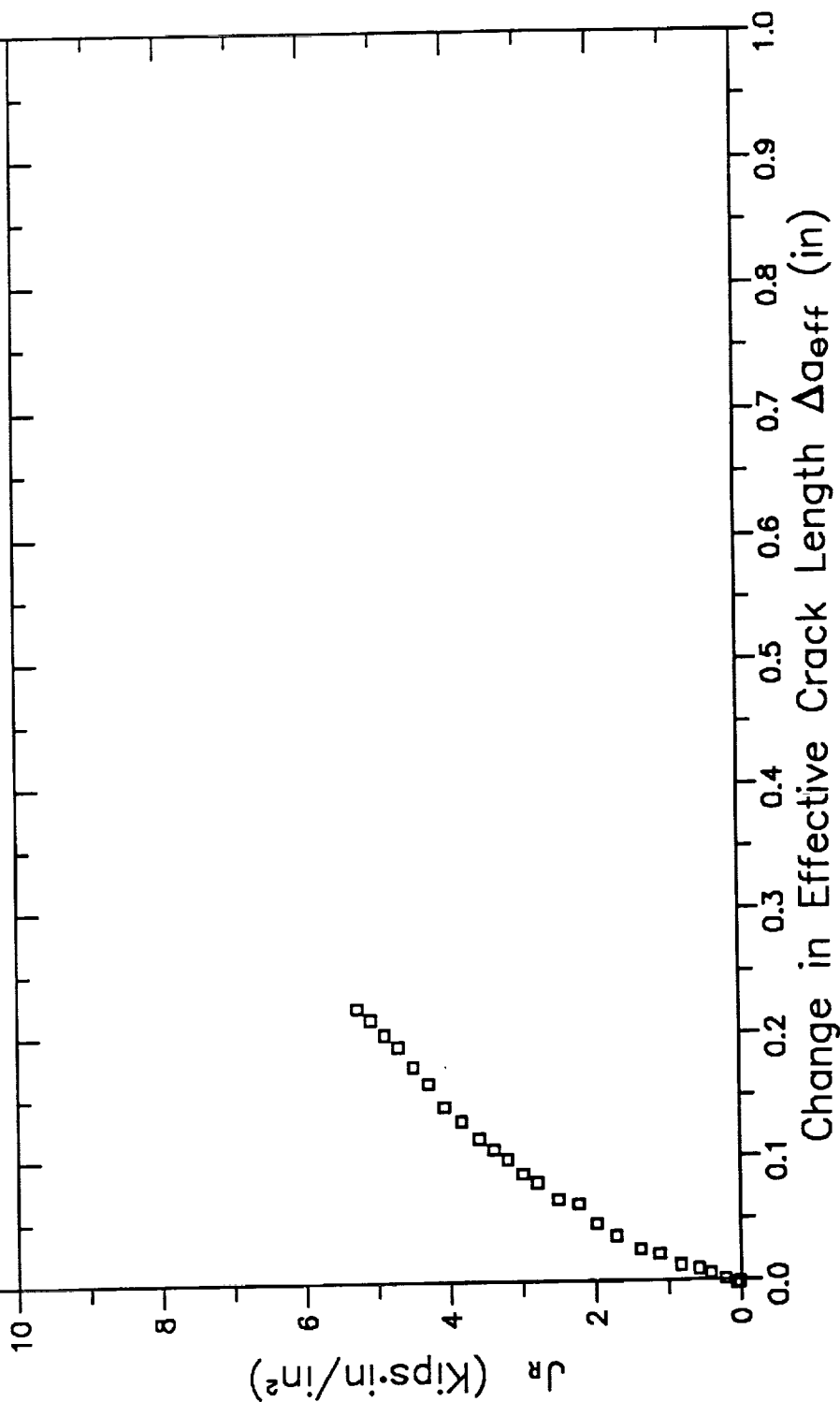


# RESISTANCE CURVE

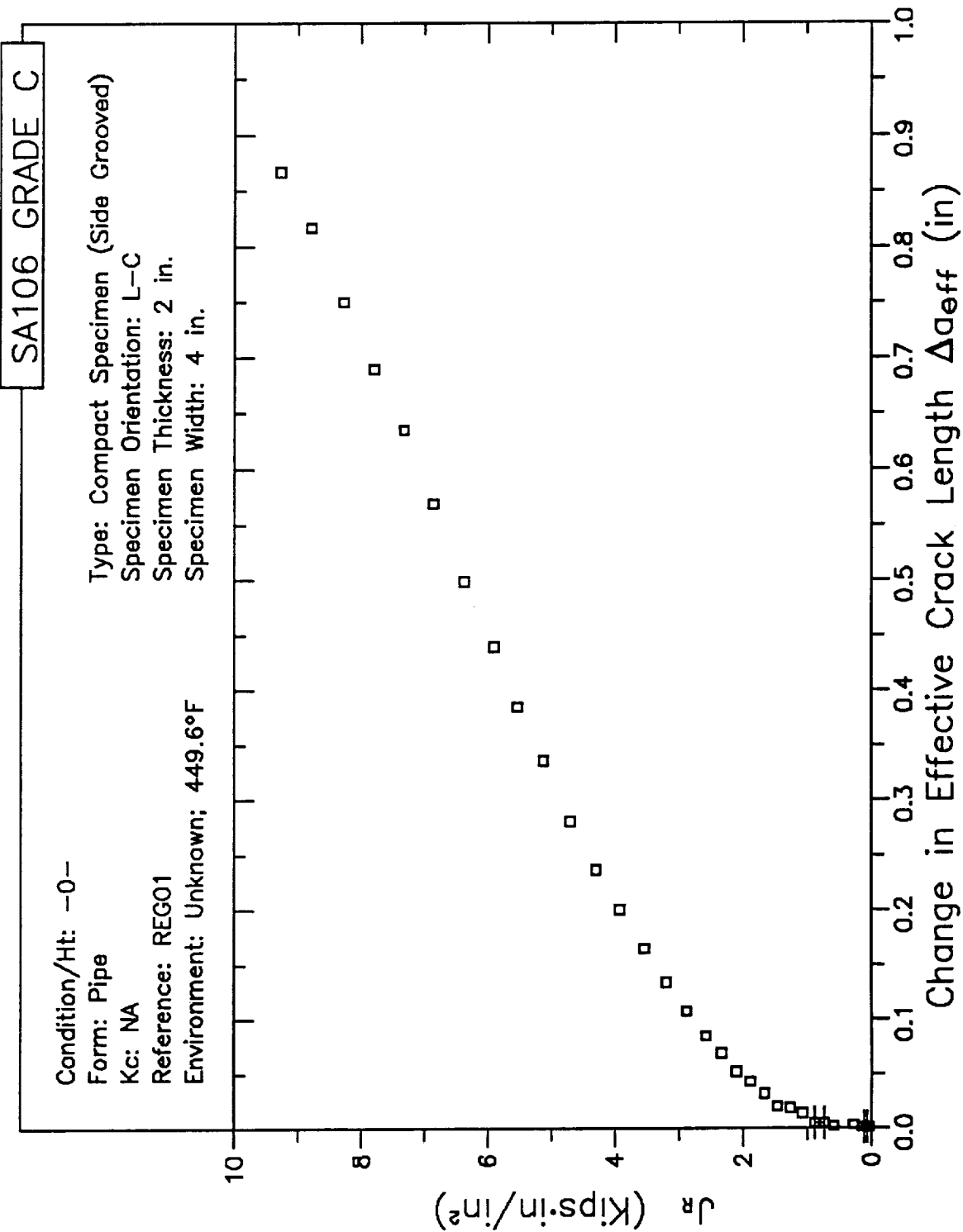
SA106 GRADE C

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: NRC02  
Environment: Unknown; 300.2°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 0.98 in.  
Specimen Width: 2 in.

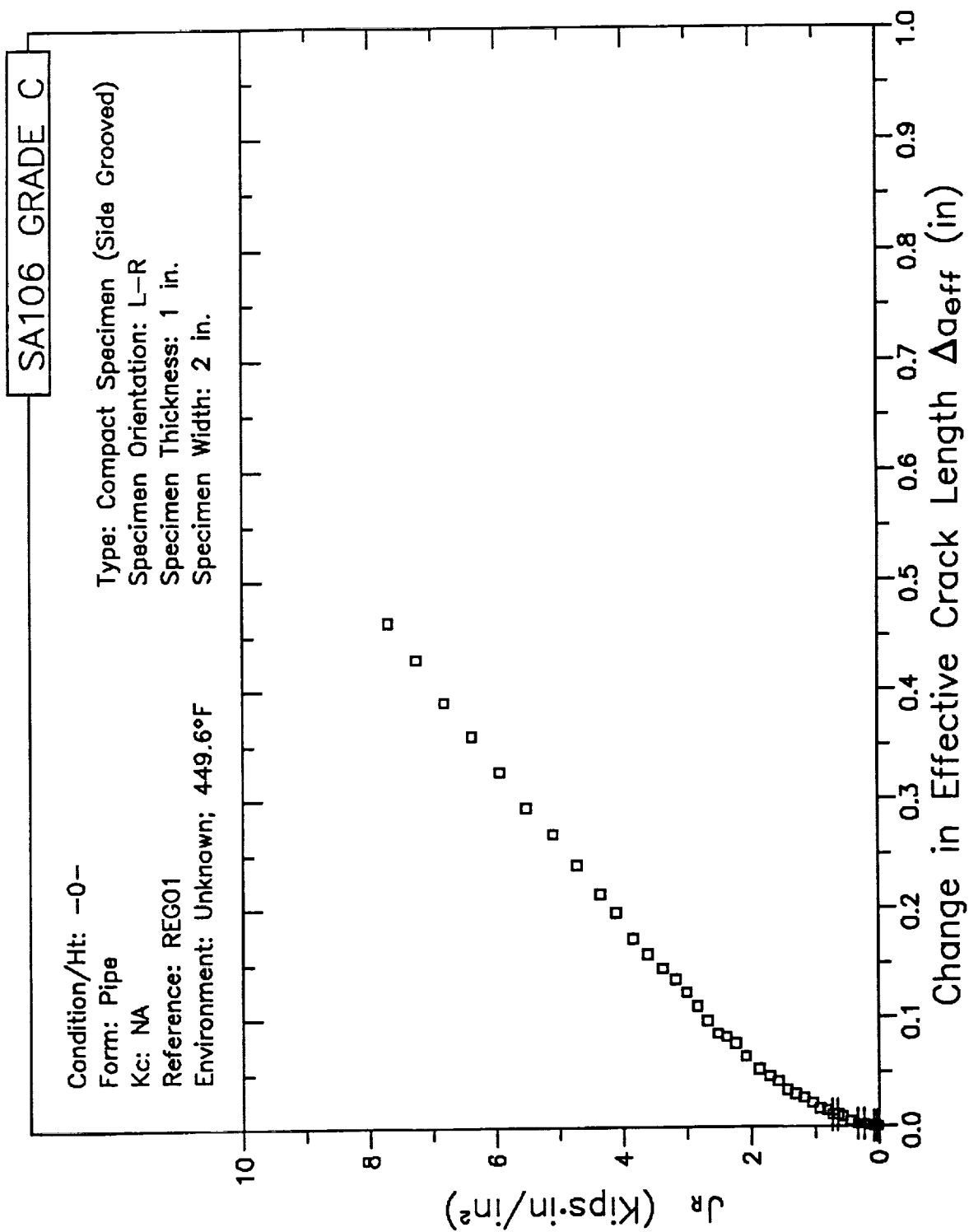


# RESISTANCE CURVE



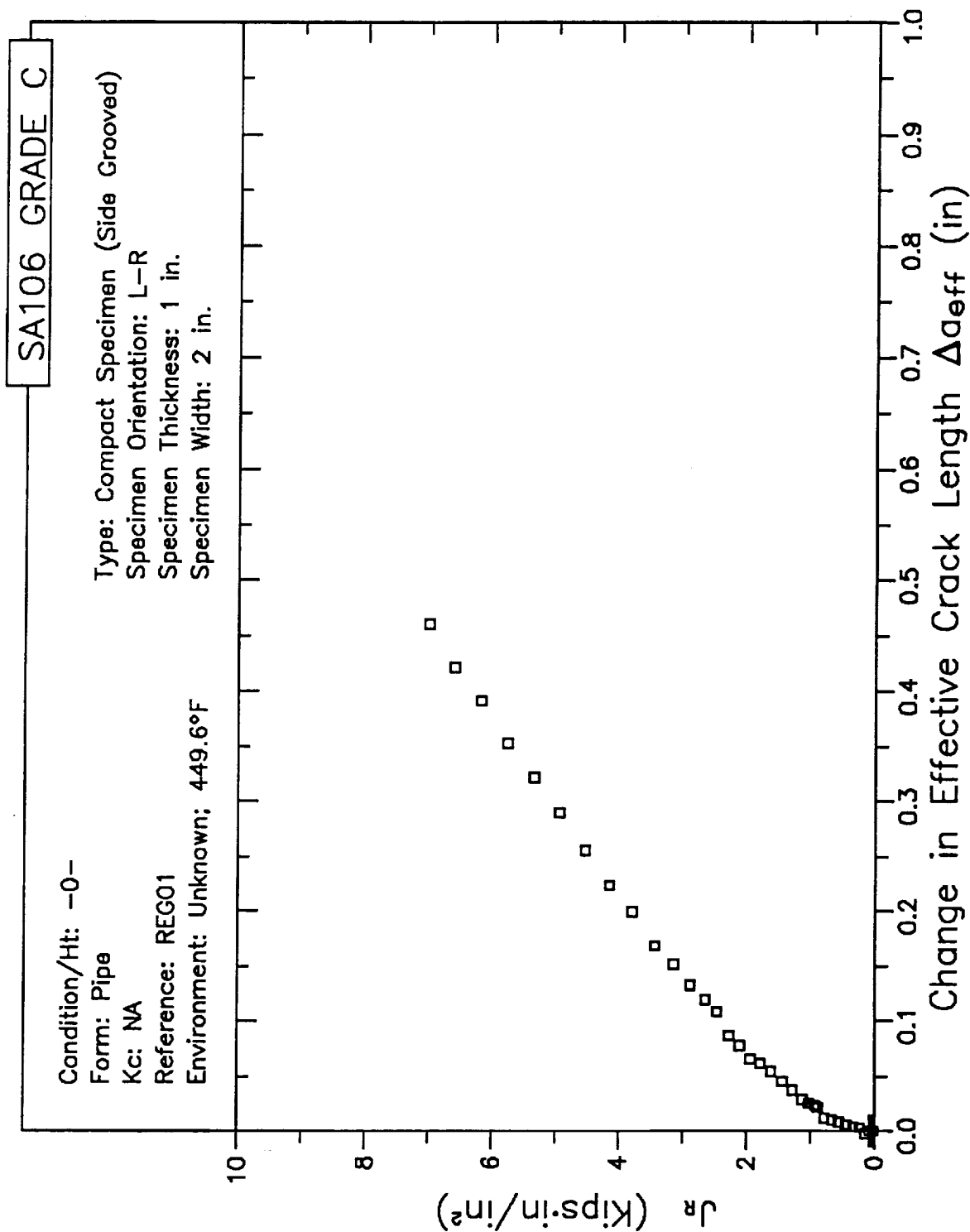
B3-531

# RESISTANCE CURVE



B3-532

# RESISTANCE CURVE

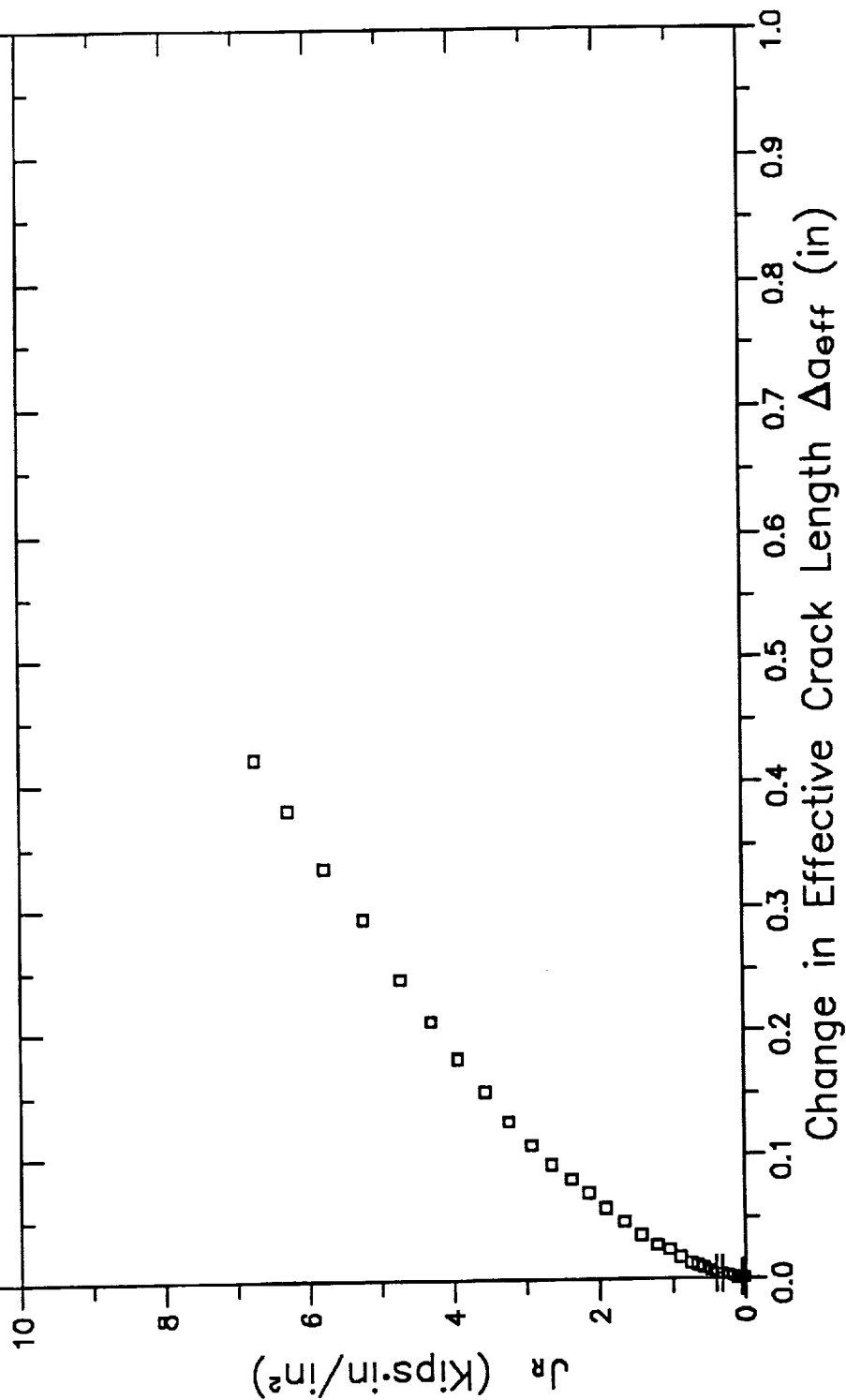


# RESISTANCE CURVE

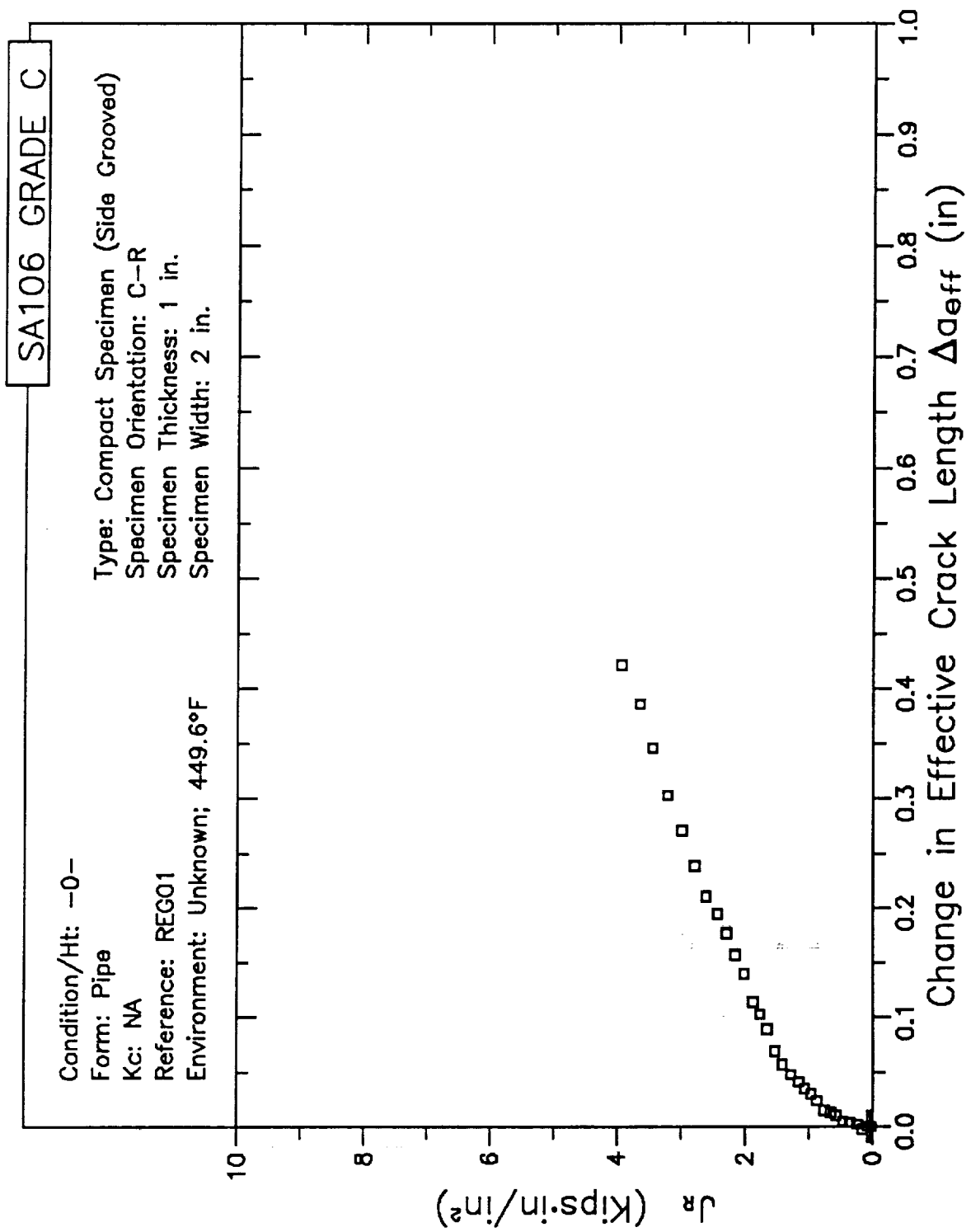
SA106 GRADE C

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG01  
Environment: Unknown; 449.6°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-R  
Specimen Thickness: 1 in.  
Specimen Width: 2 in.



# RESISTANCE CURVE

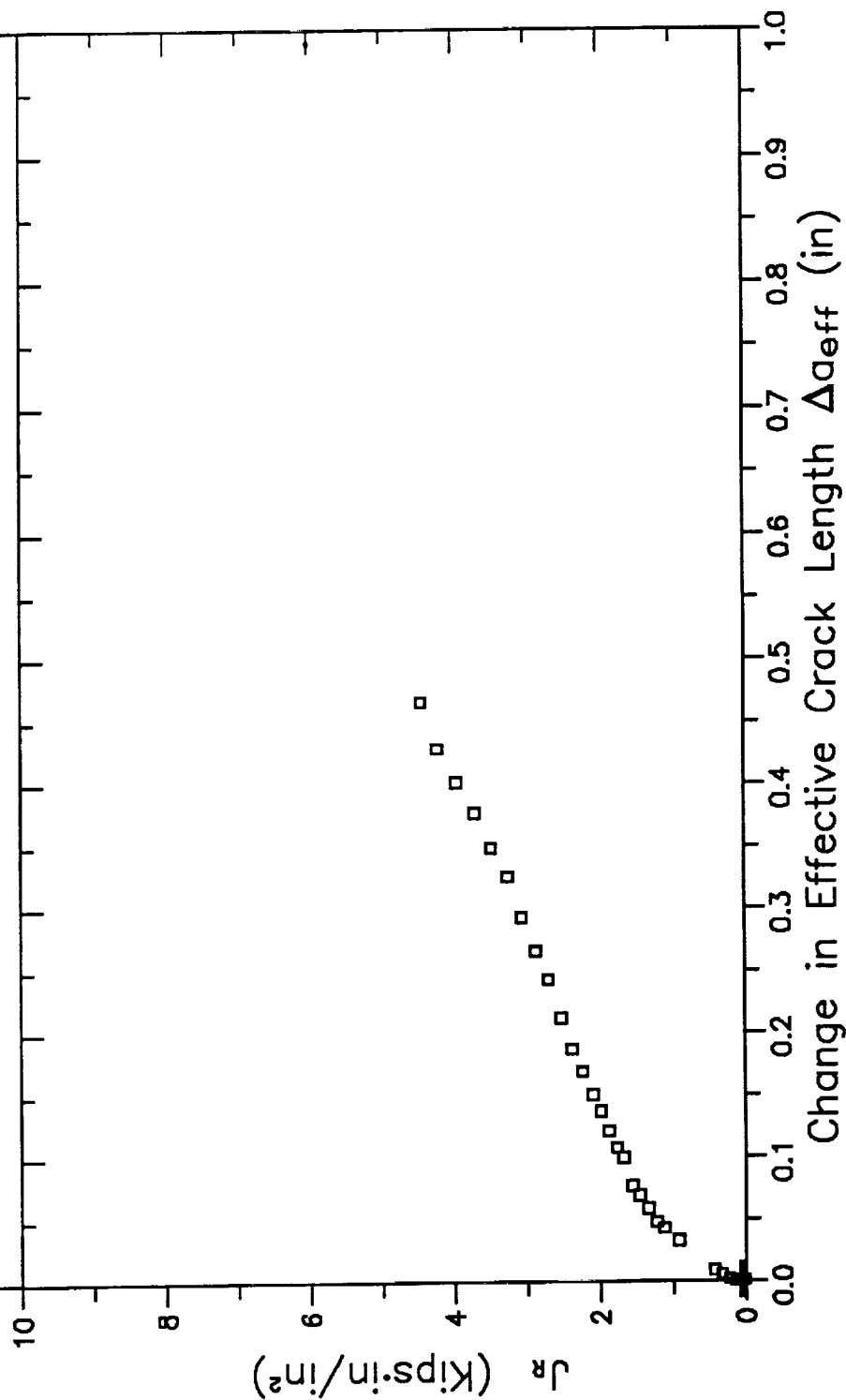


# RESISTANCE CURVE

SA106 GRADE C

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG01  
Environment: Unknown; 449.6°F

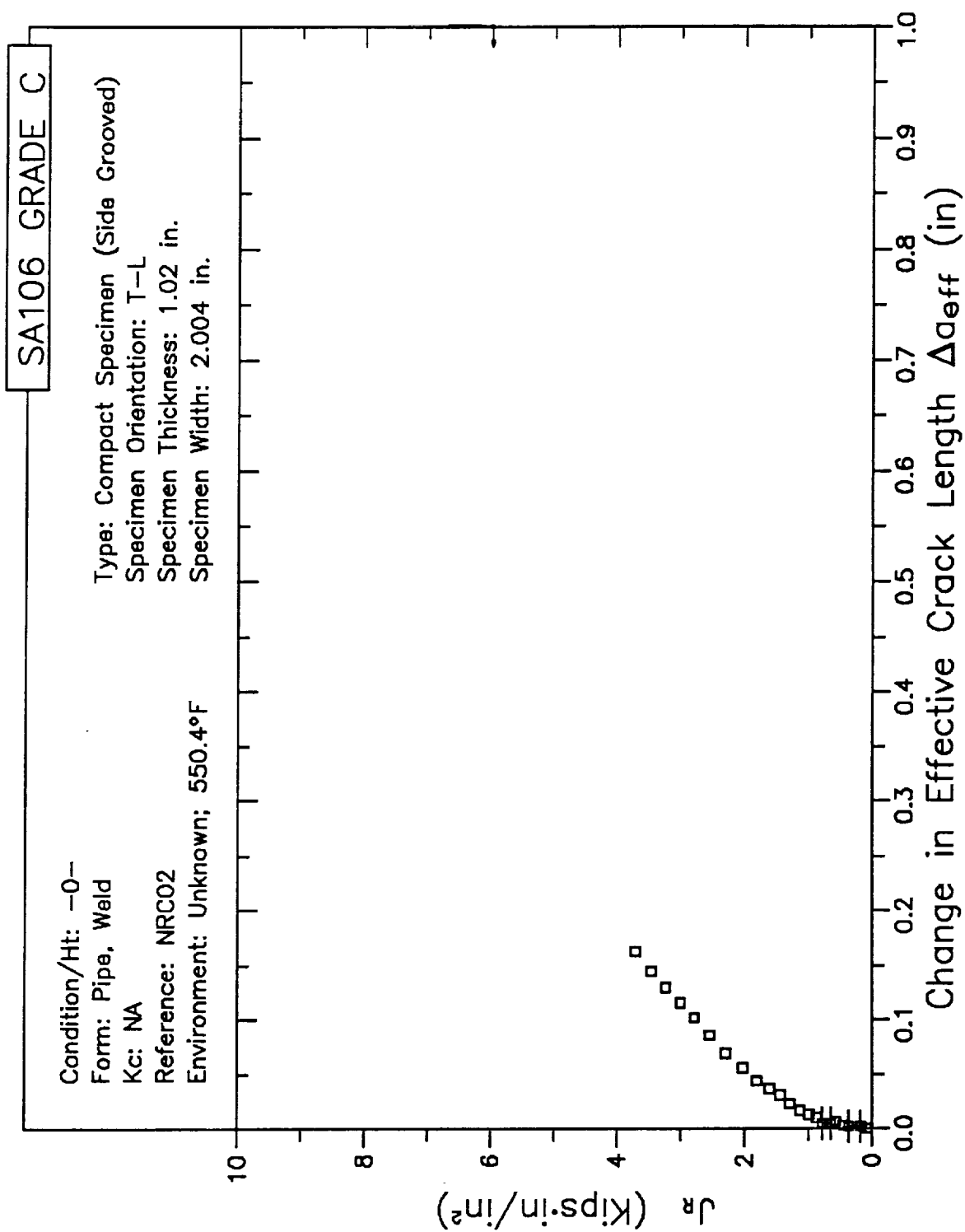
Type: Compact Specimen (Side Grooved)  
Specimen Orientation: C-R  
Specimen Thickness: 1 in.  
Specimen Width: 2 in.



B3-536



# RESISTANCE CURVE

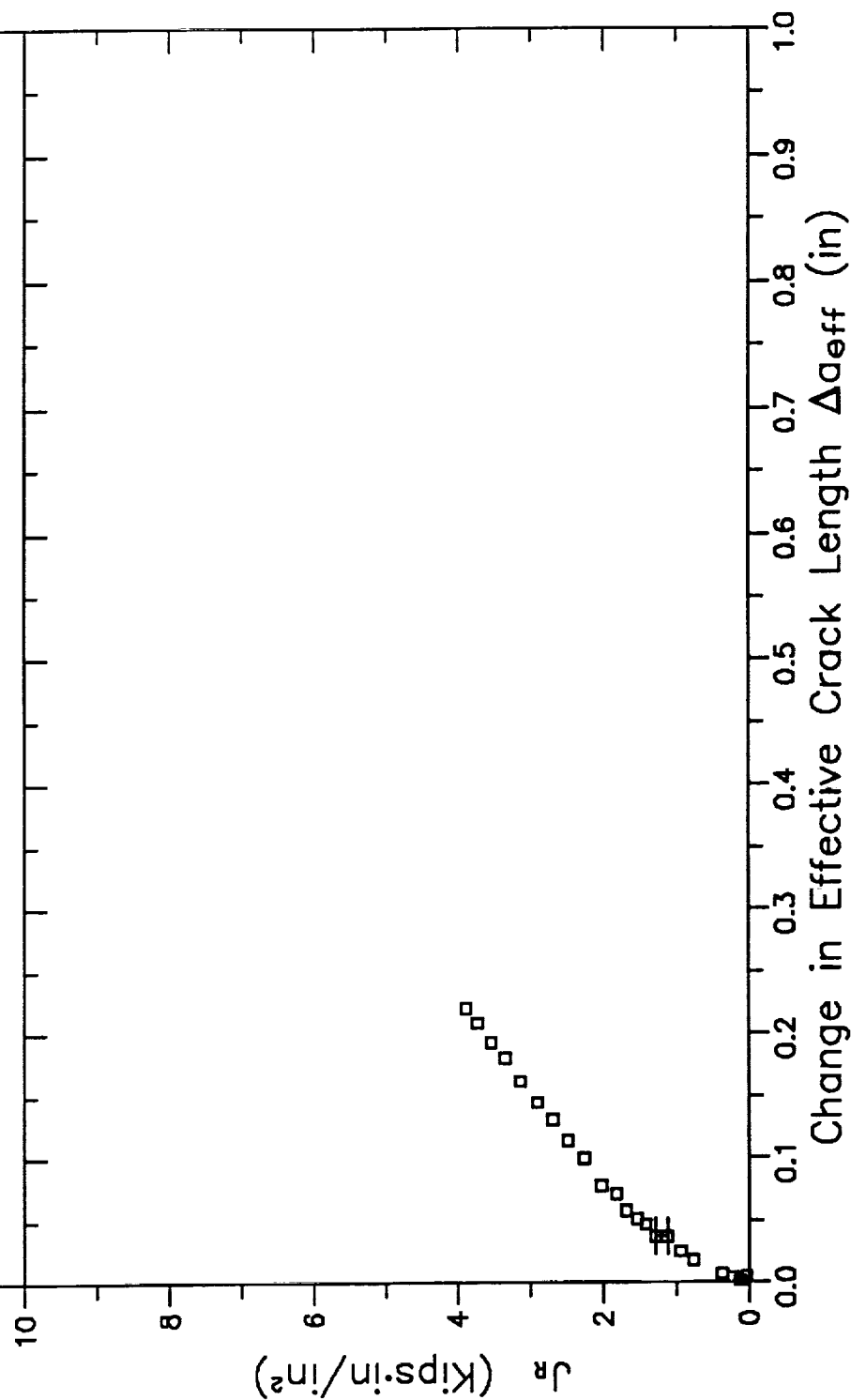


# RESISTANCE CURVE

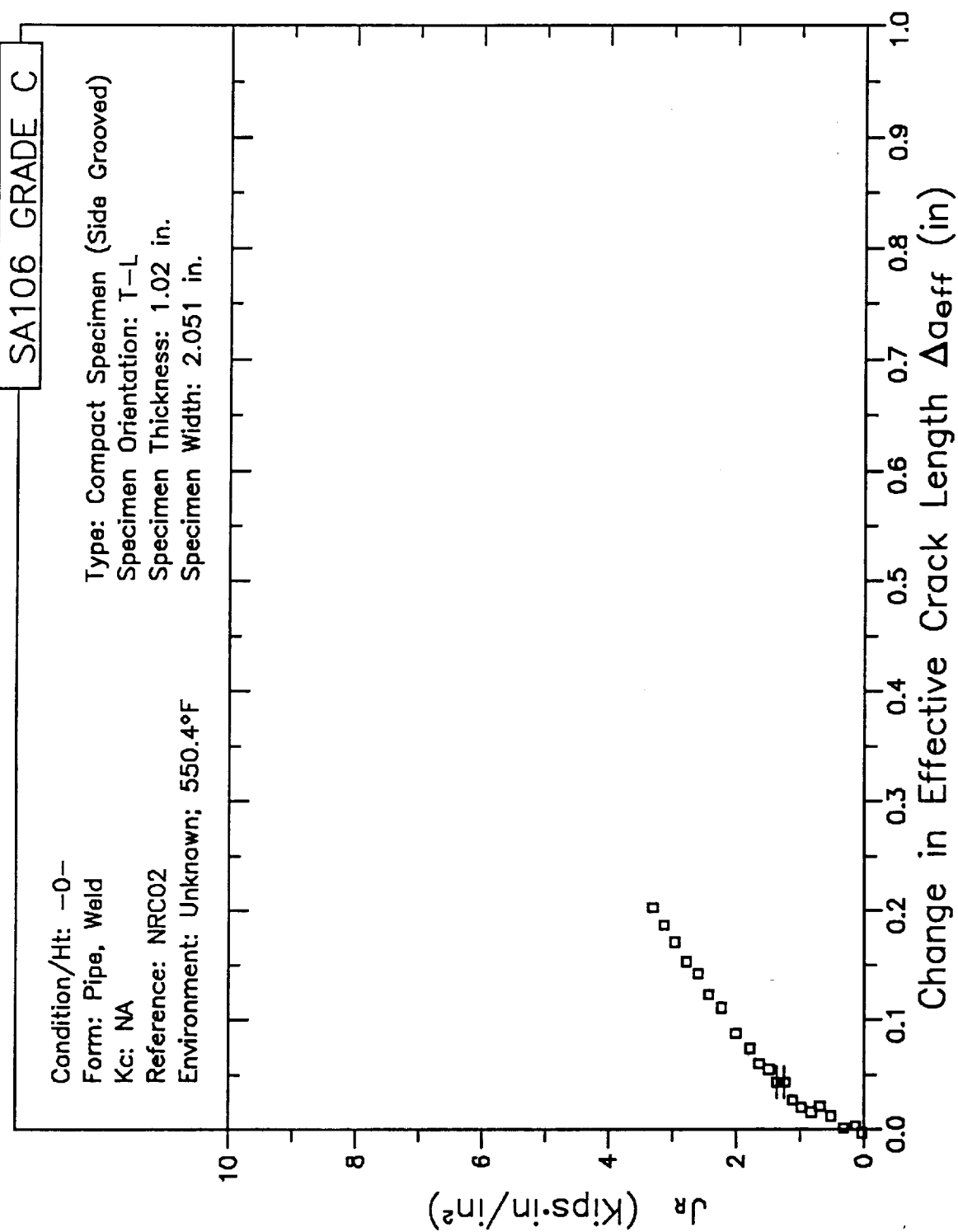
SA106 GRADE C

Condition/Ht: -0-  
Form: Pipe, Weld  
Kc: NA  
Reference: NRC02  
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: T-L  
Specimen Thickness: 1.02 in.  
Specimen Width: 2.047 in.



# RESISTANCE CURVE

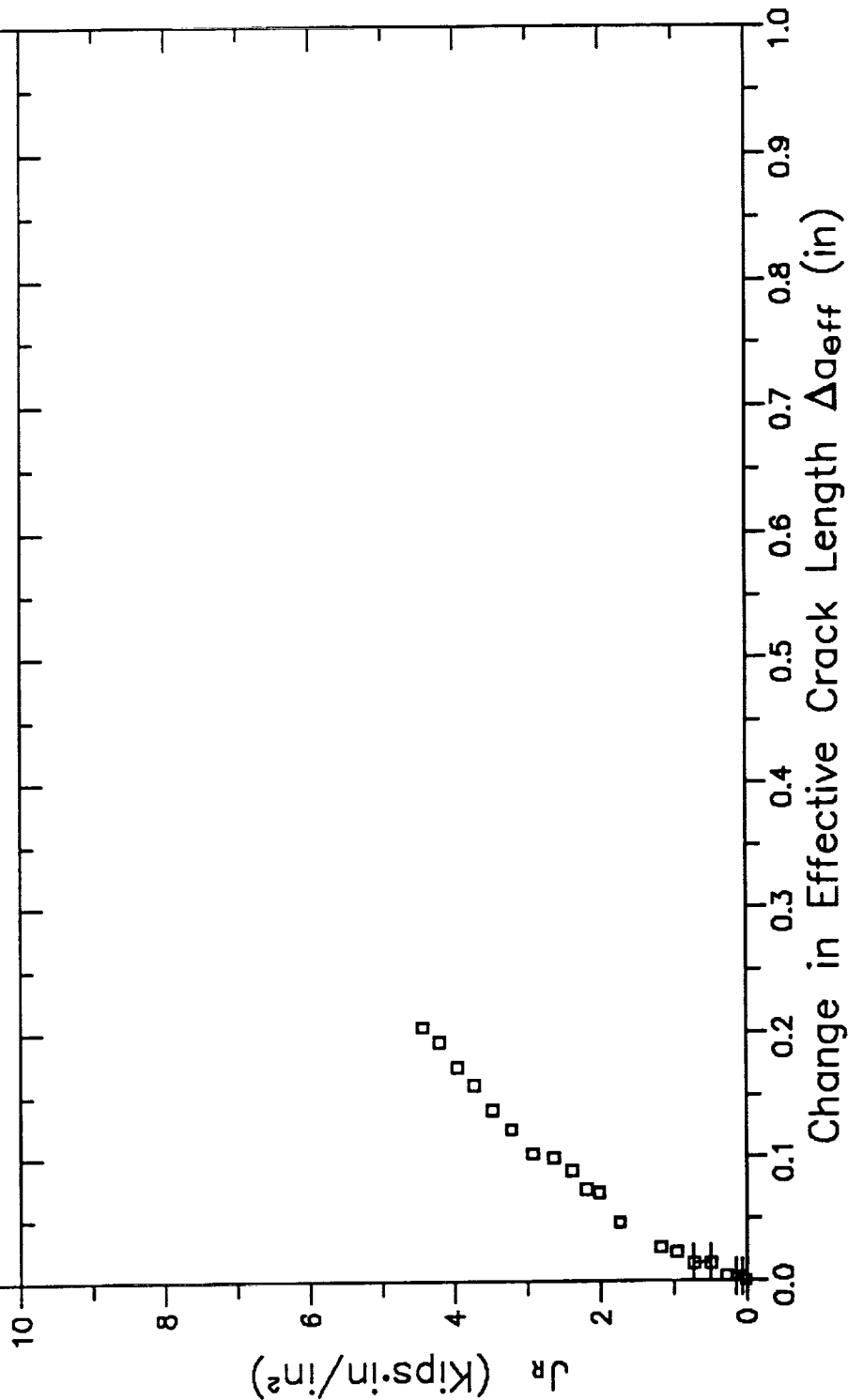


# RESISTANCE CURVE

SA106 GRADE C

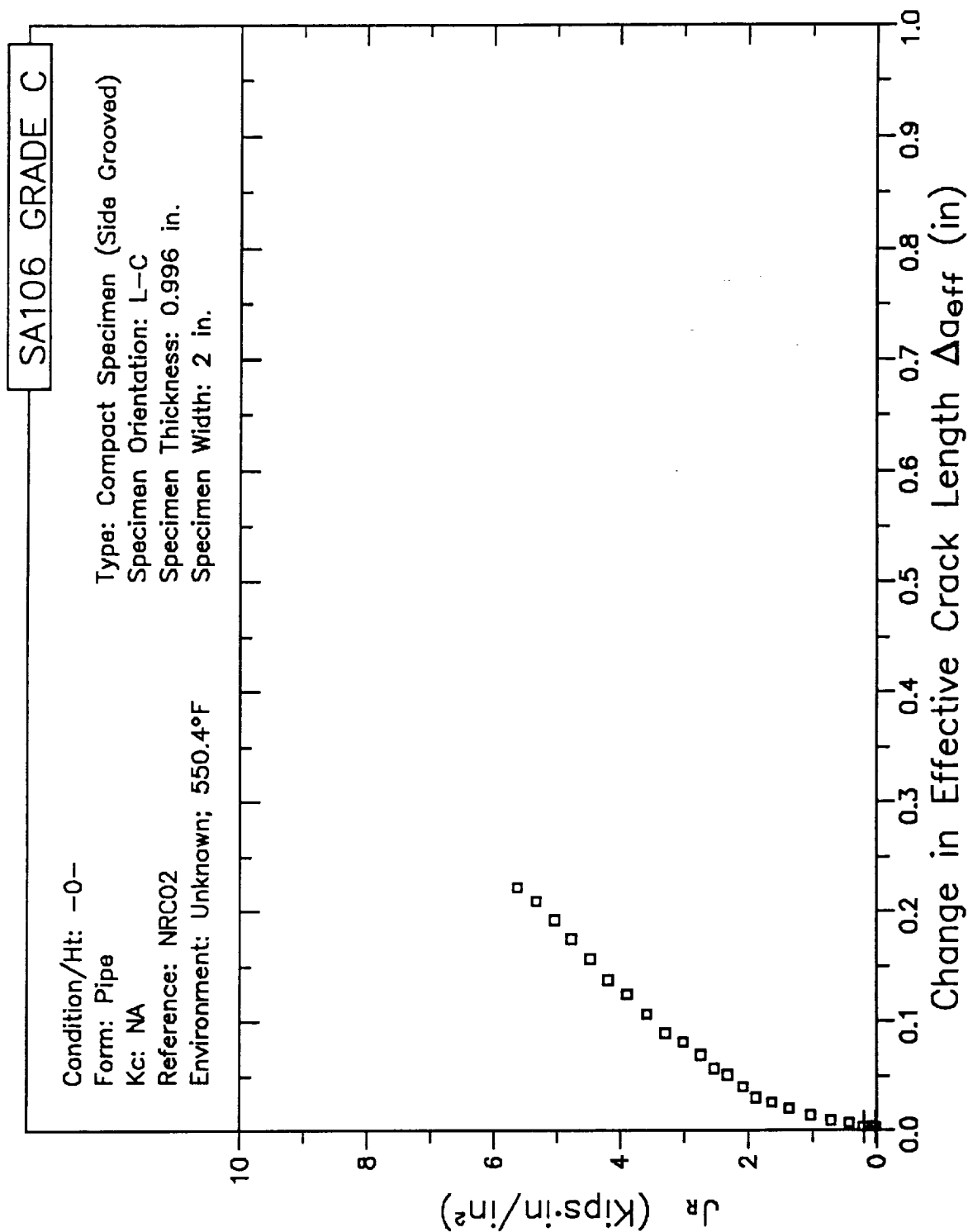
Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: NRC02  
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 0.996 in.  
Specimen Width: 2 in.

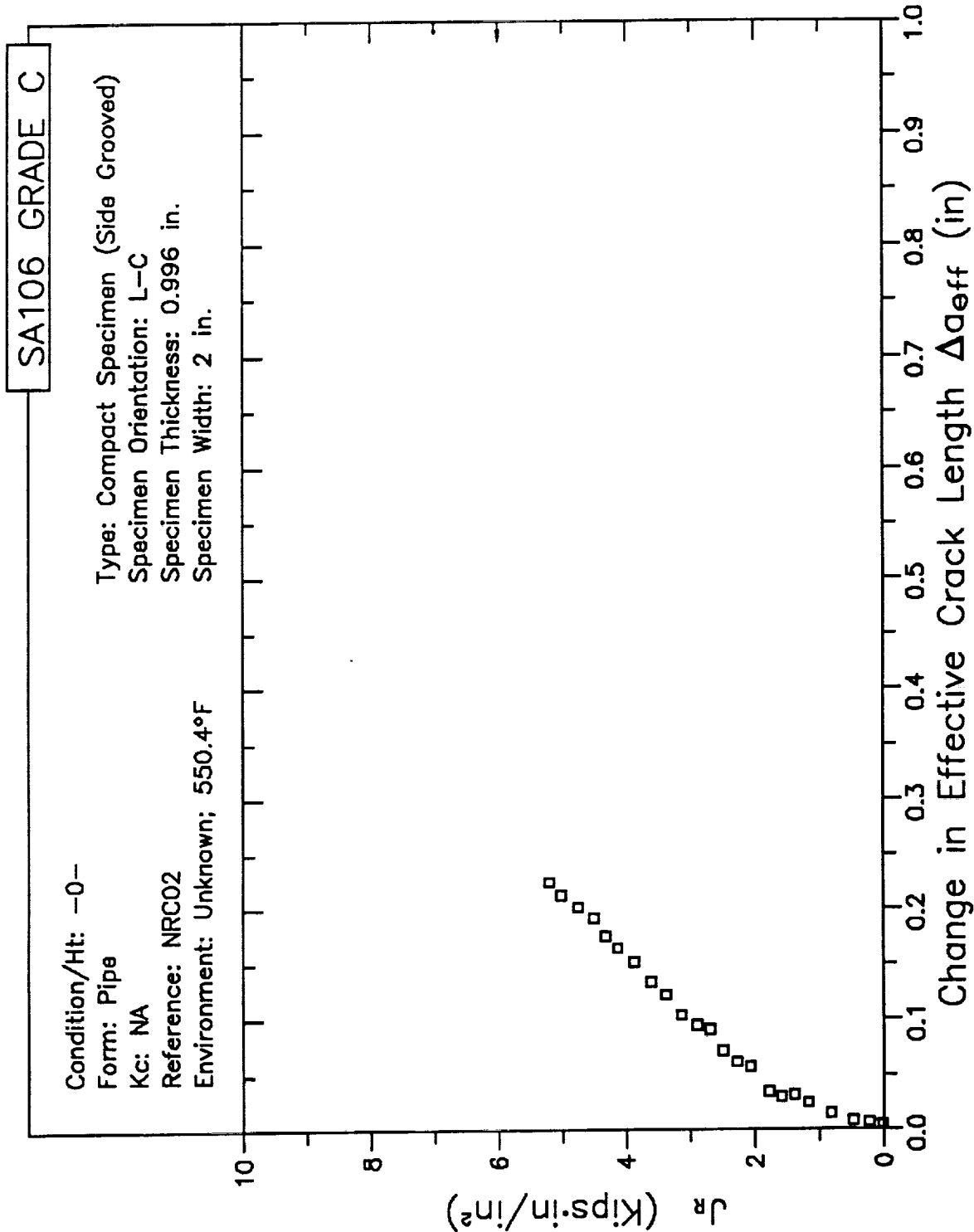


B3-540

# RESISTANCE CURVE

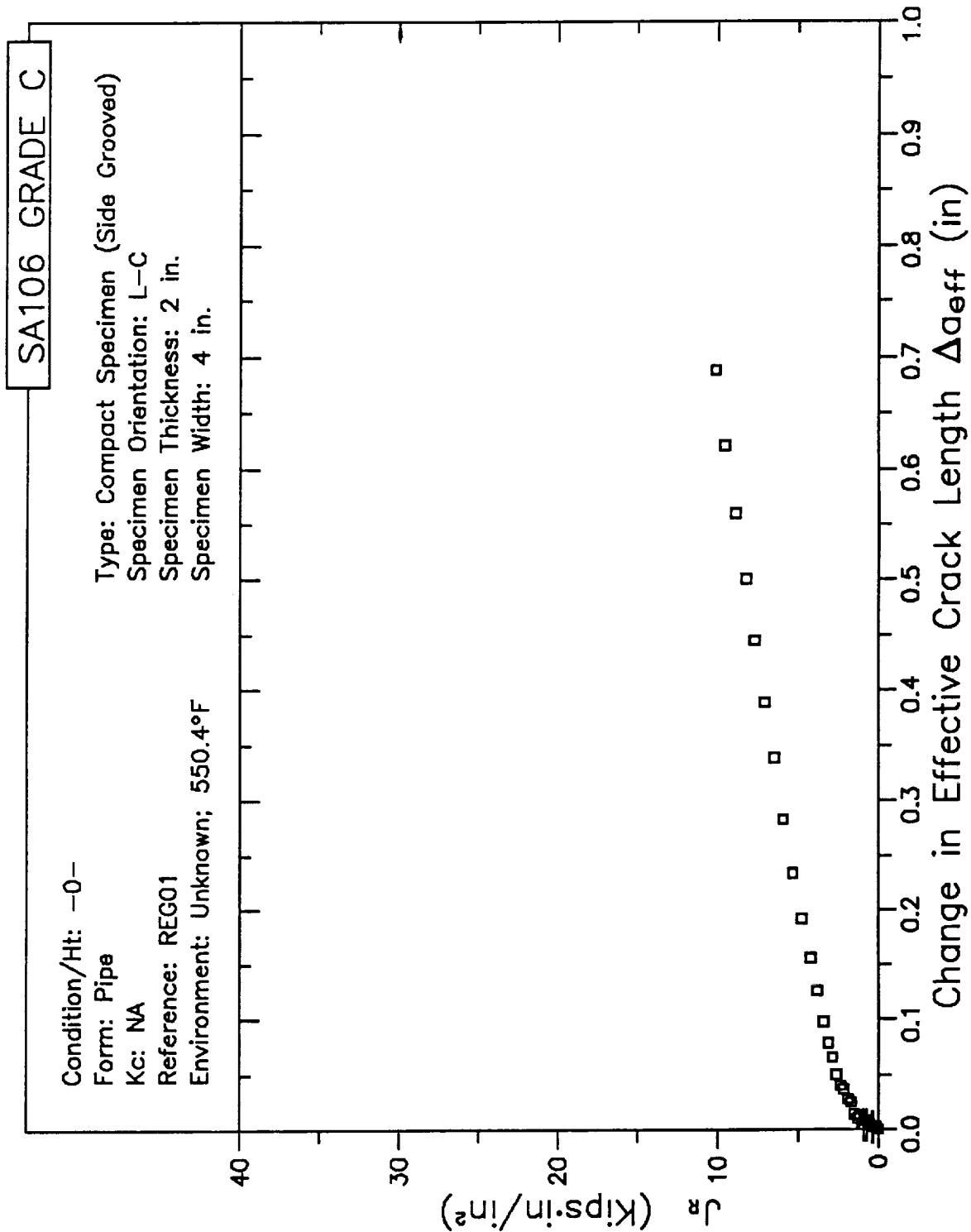


# RESISTANCE CURVE

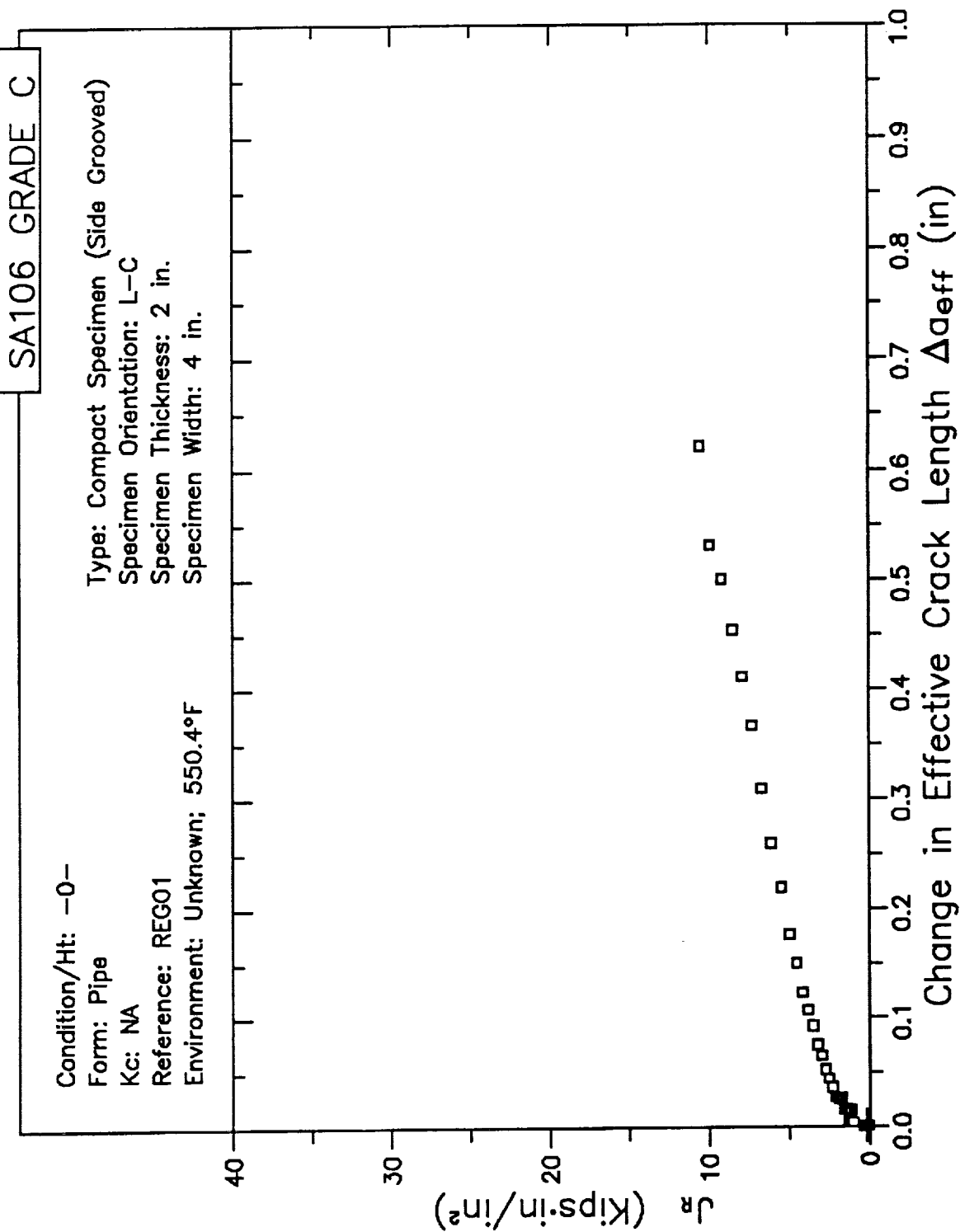


B3-542

# RESISTANCE CURVE

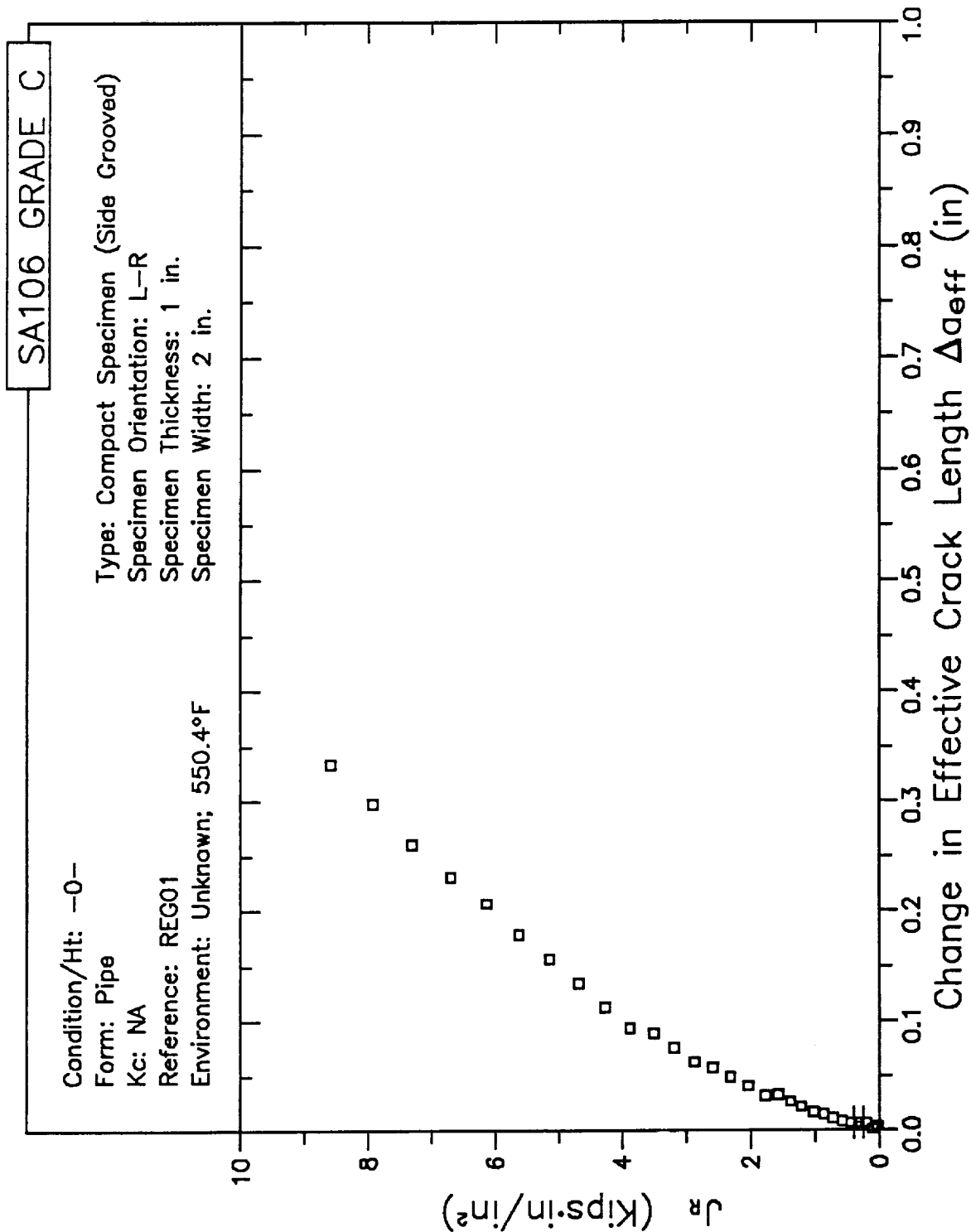


# RESISTANCE CURVE





# RESISTANCE CURVE

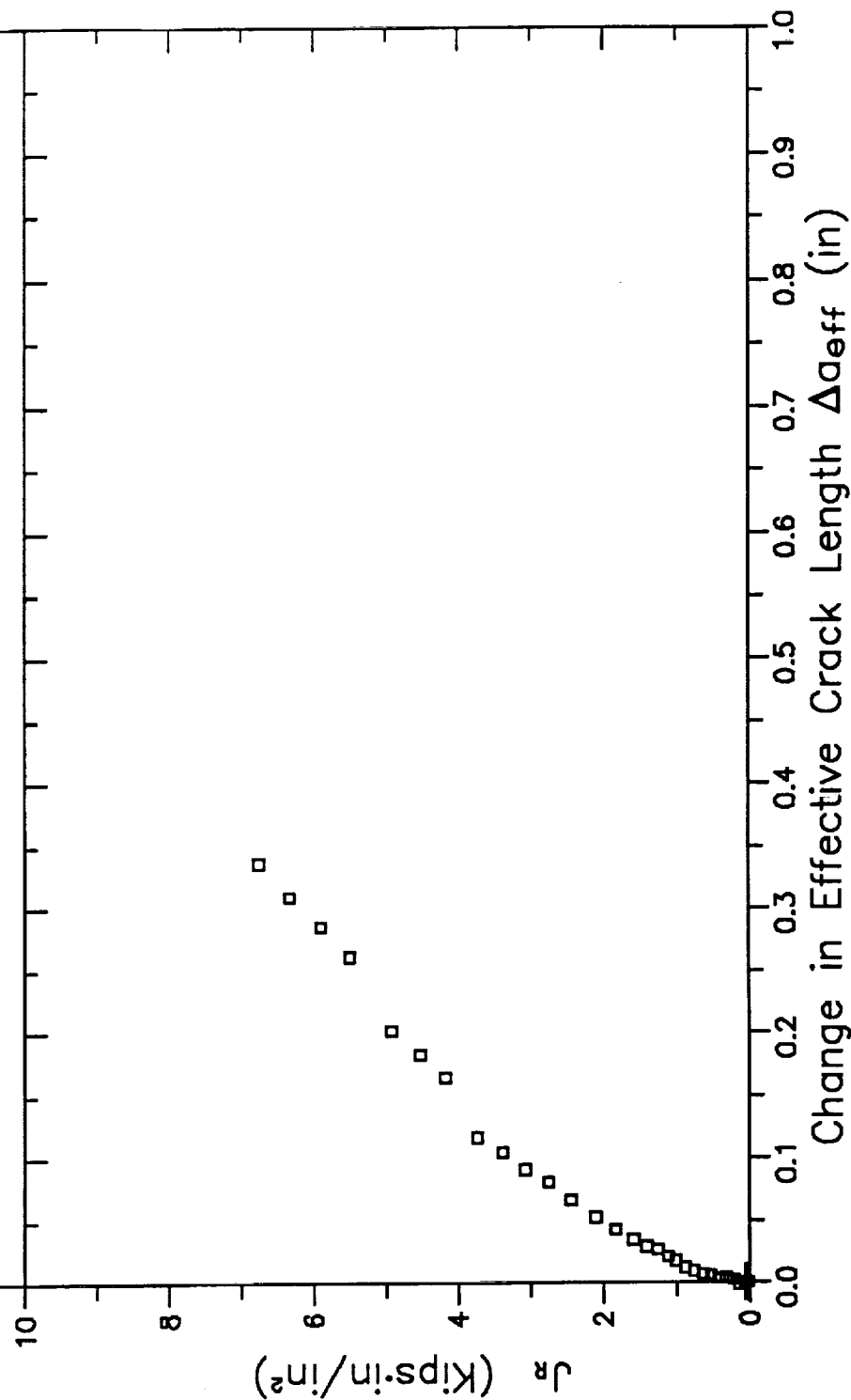


# RESISTANCE CURVE

SA106 GRADE C

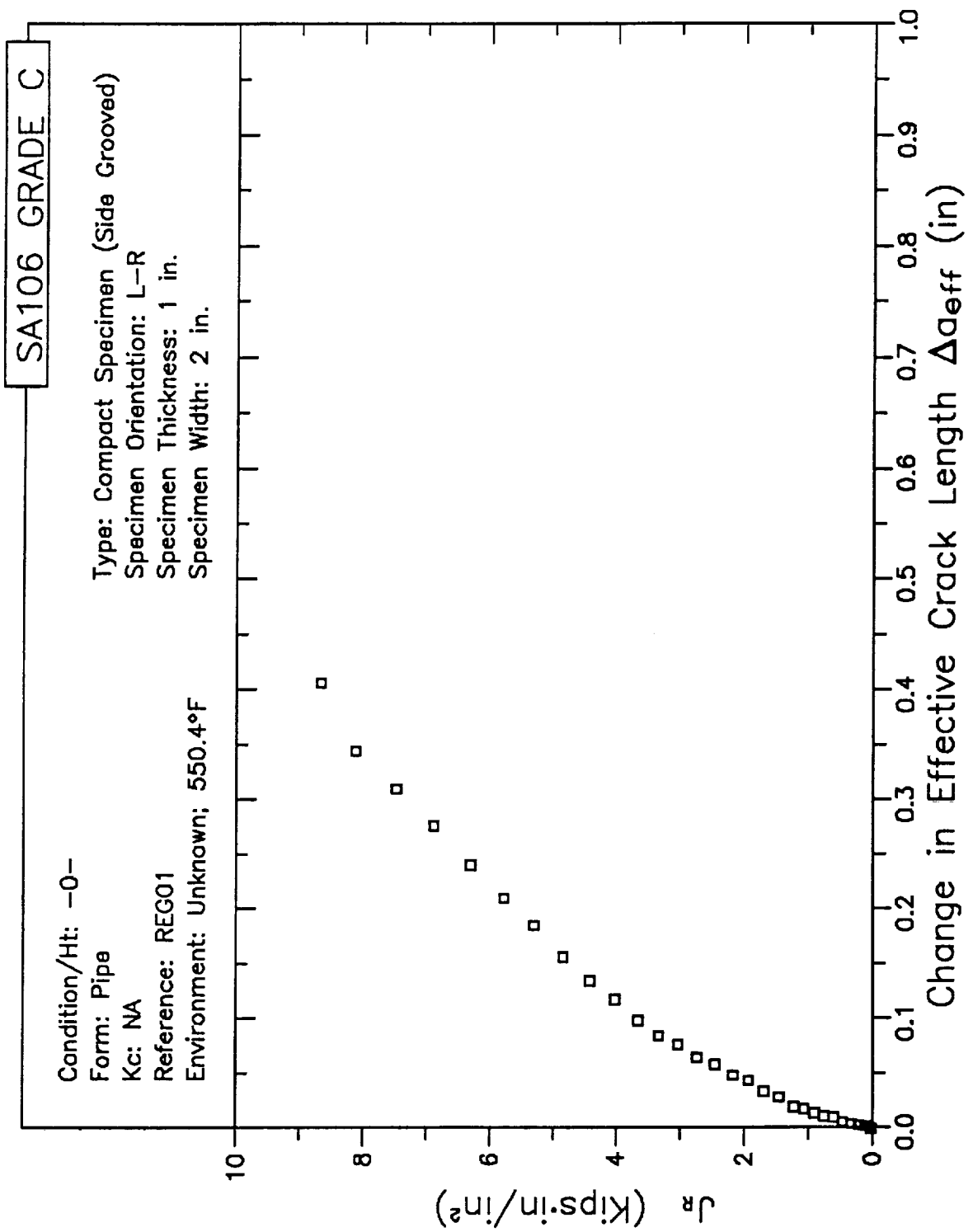
Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG01  
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-R  
Specimen Thickness: 1 in.  
Specimen Width: 2 in.



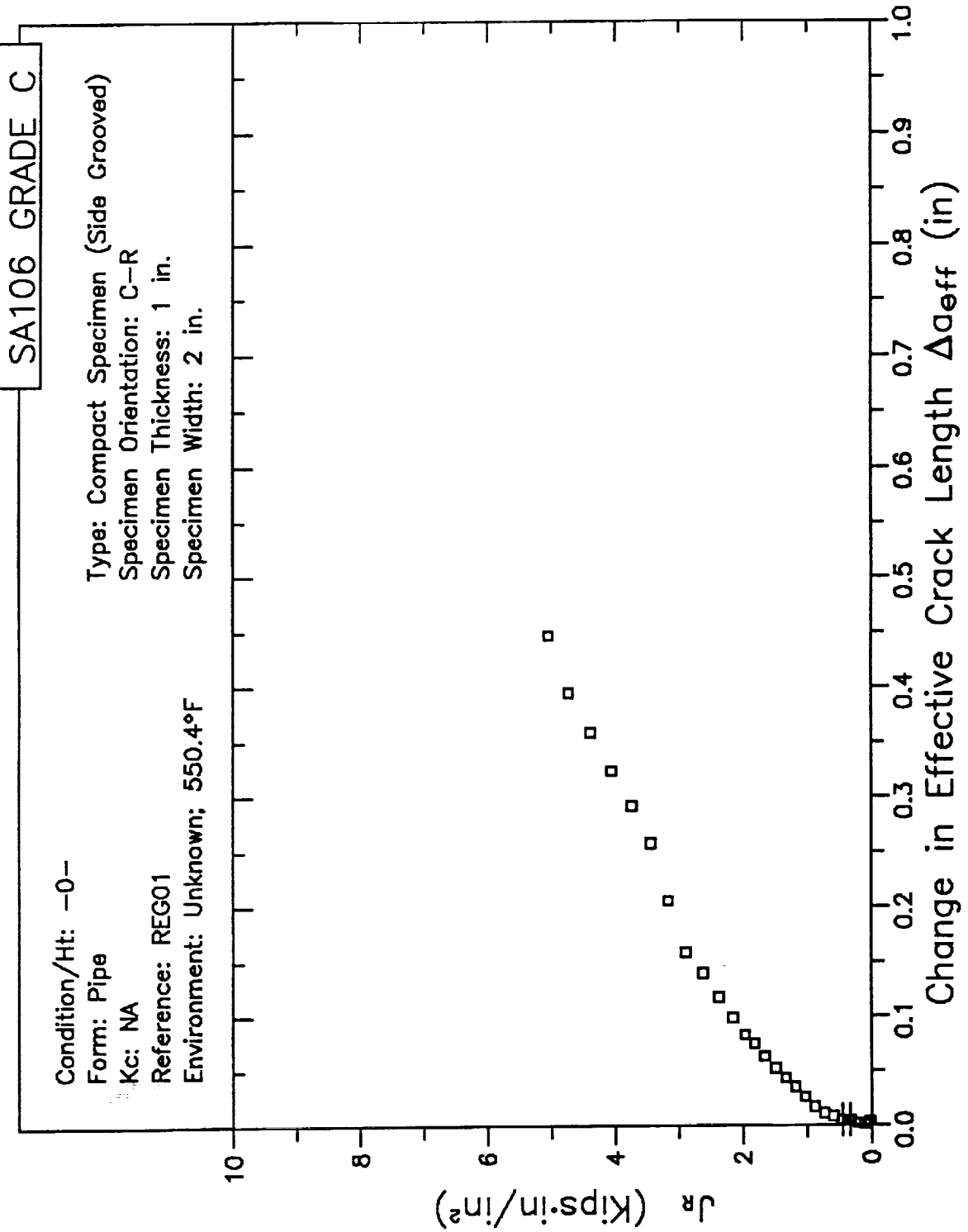
B3-546

# RESISTANCE CURVE

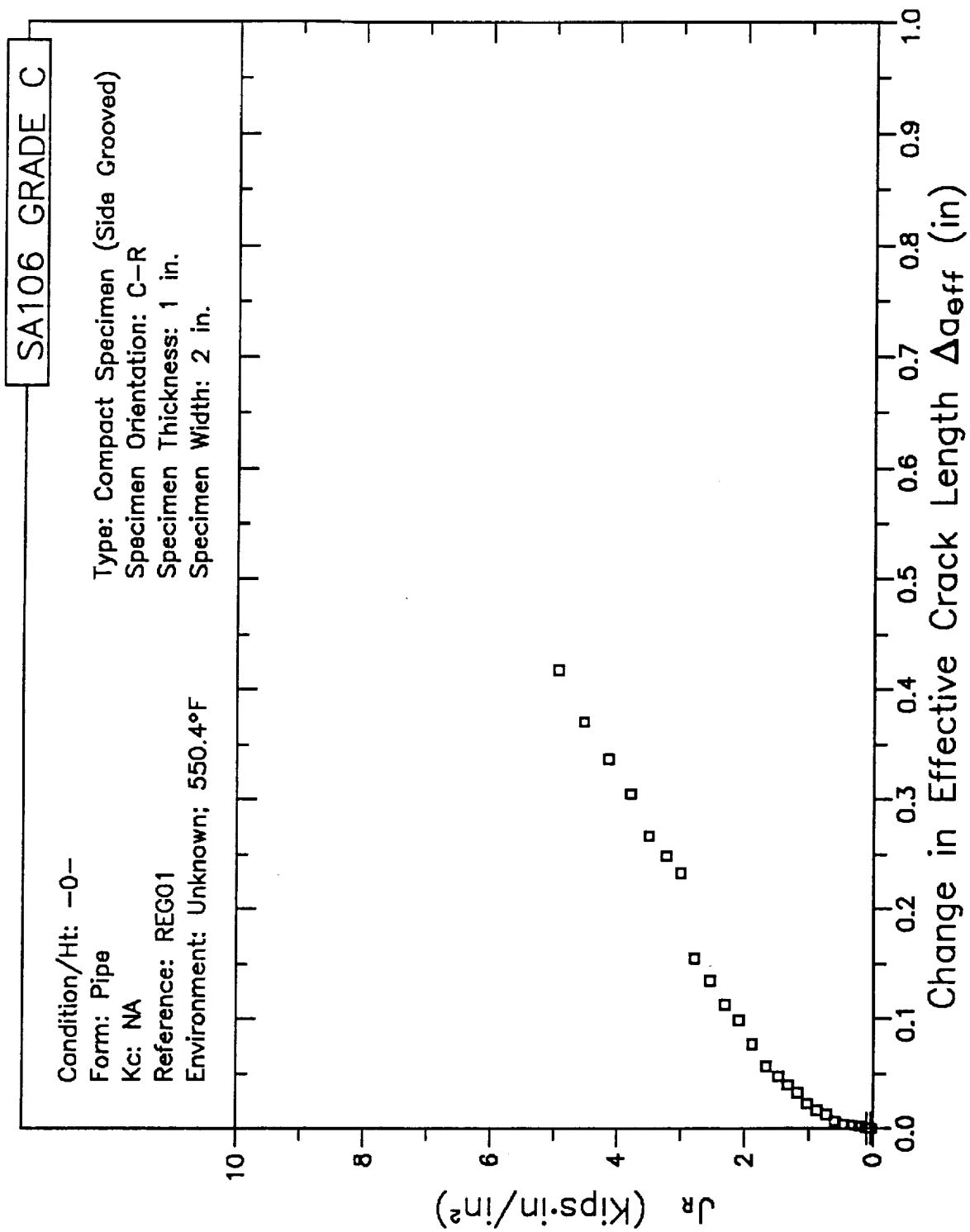


B3-547

# RESISTANCE CURVE



# RESISTANCE CURVE

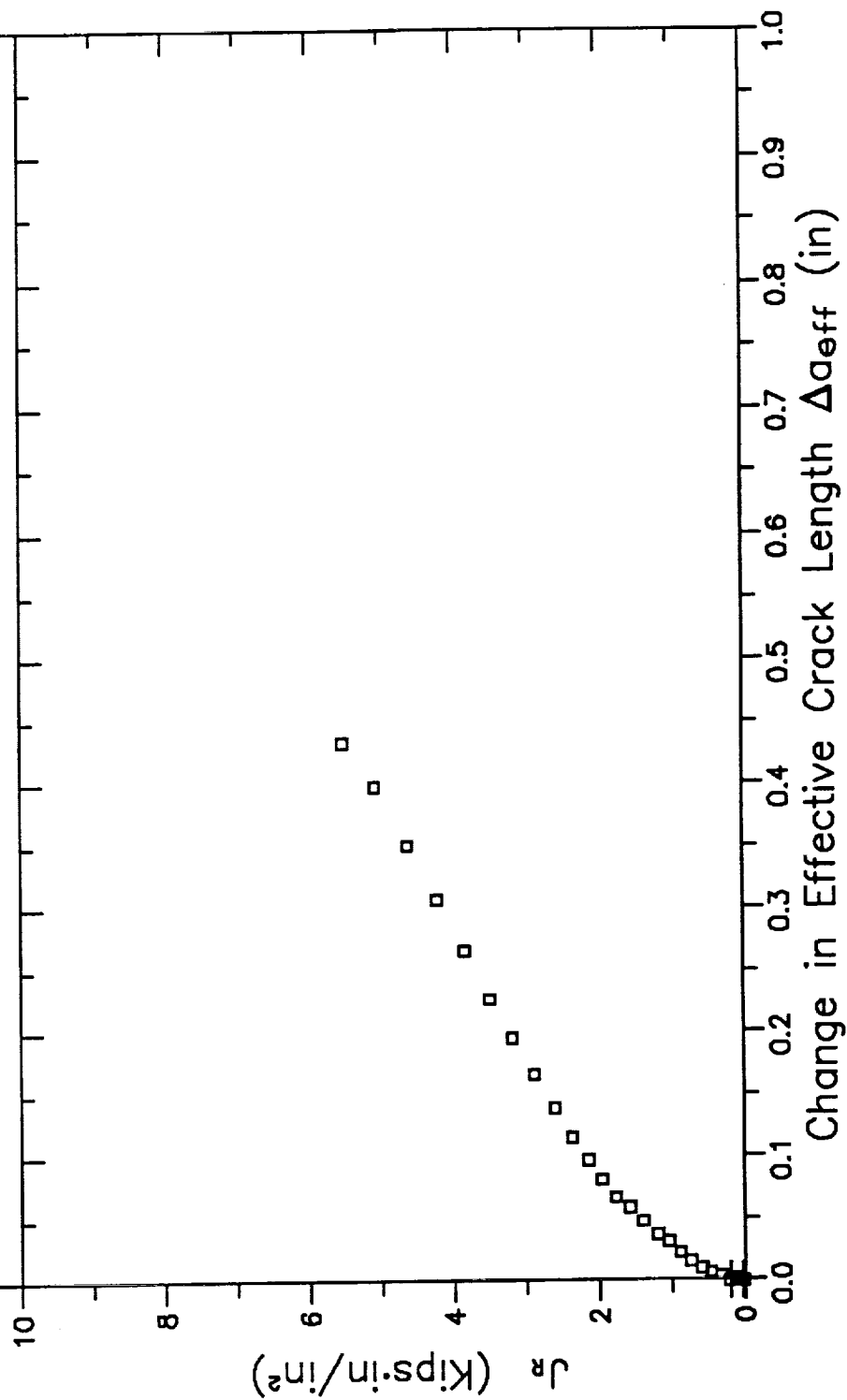


# RESISTANCE CURVE

SA106 GRADE C

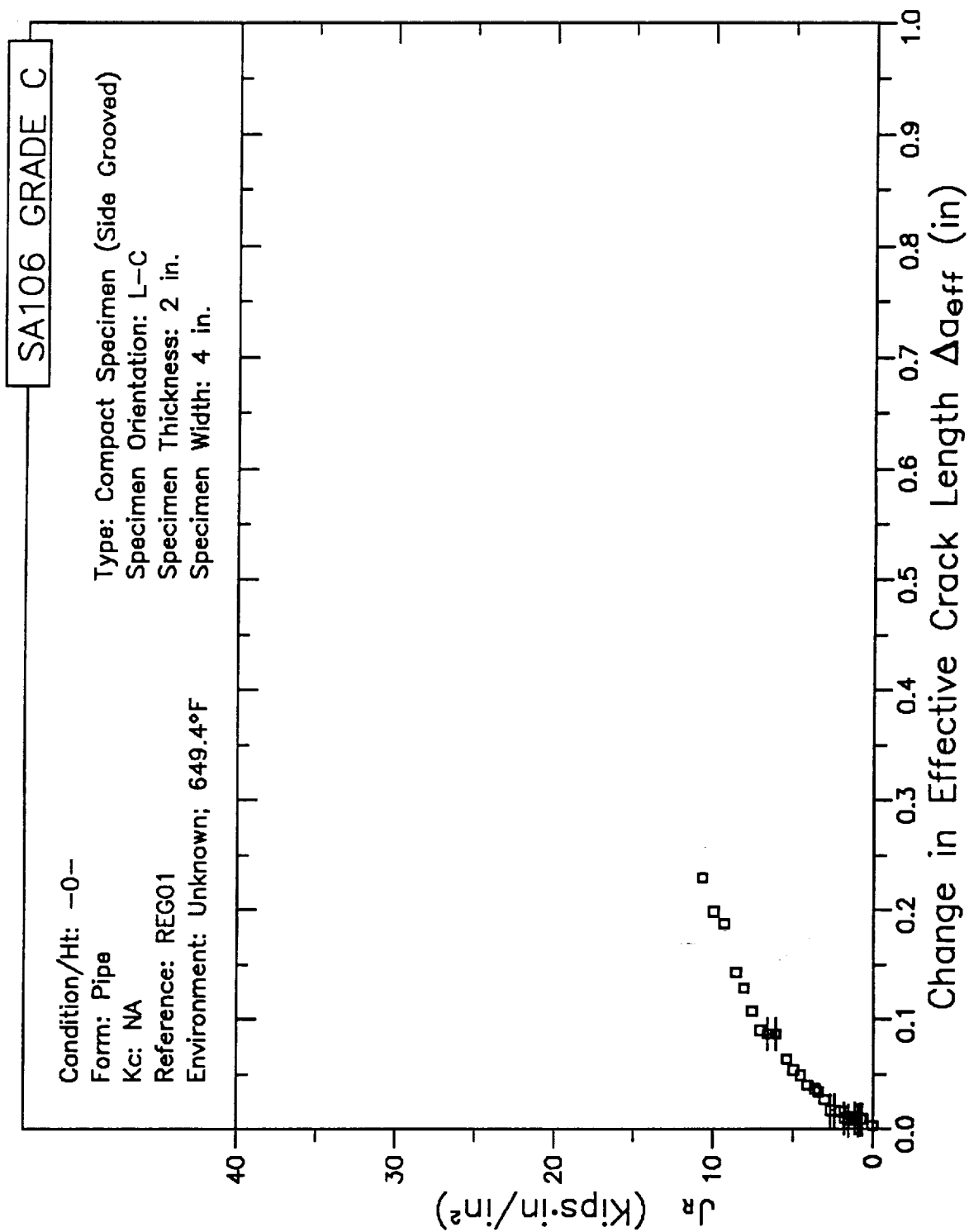
Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG01  
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: C-R  
Specimen Thickness: 1 in.  
Specimen Width: 2 in.



B3-550

# RESISTANCE CURVE

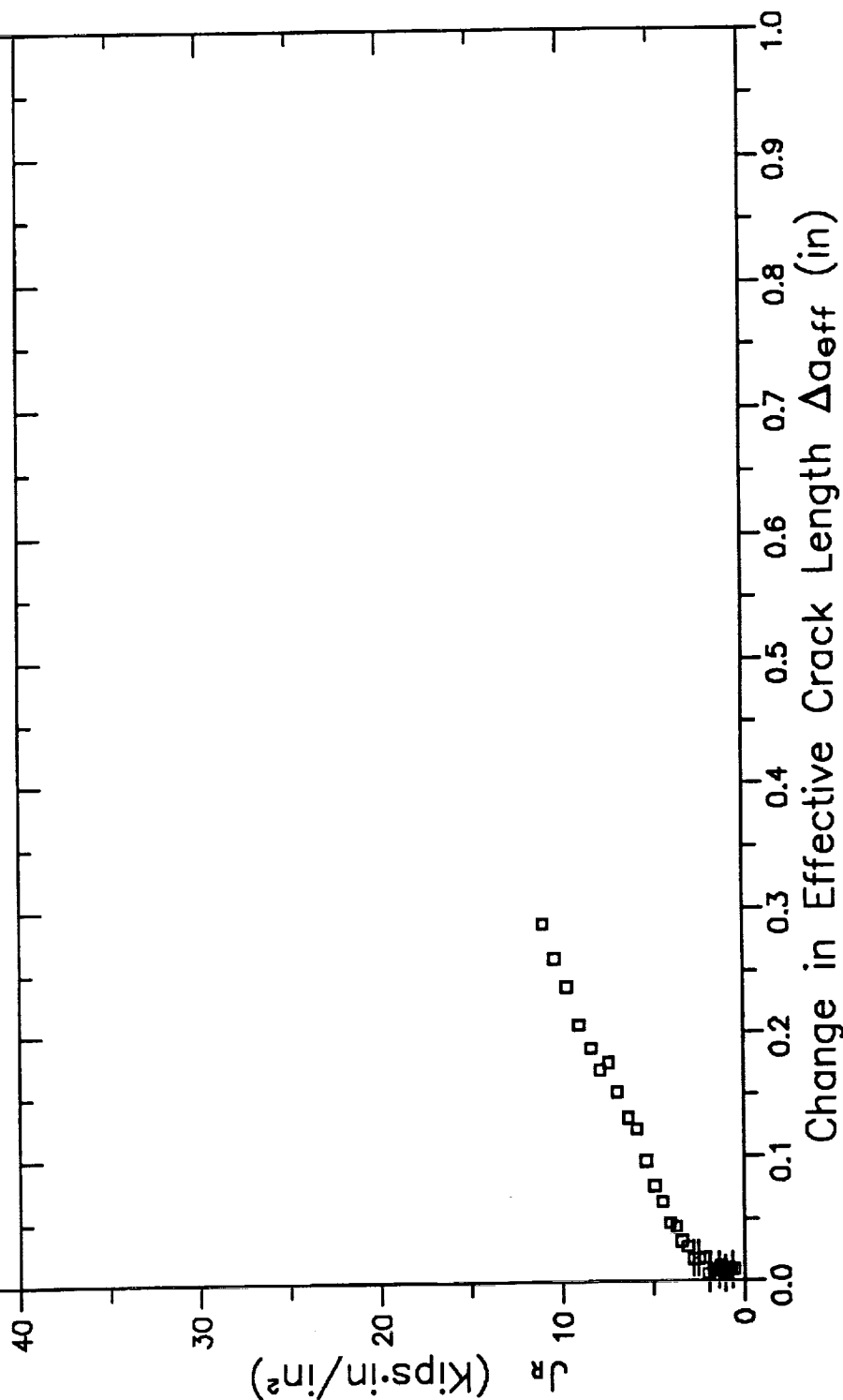


# RESISTANCE CURVE

SA106 GRADE C

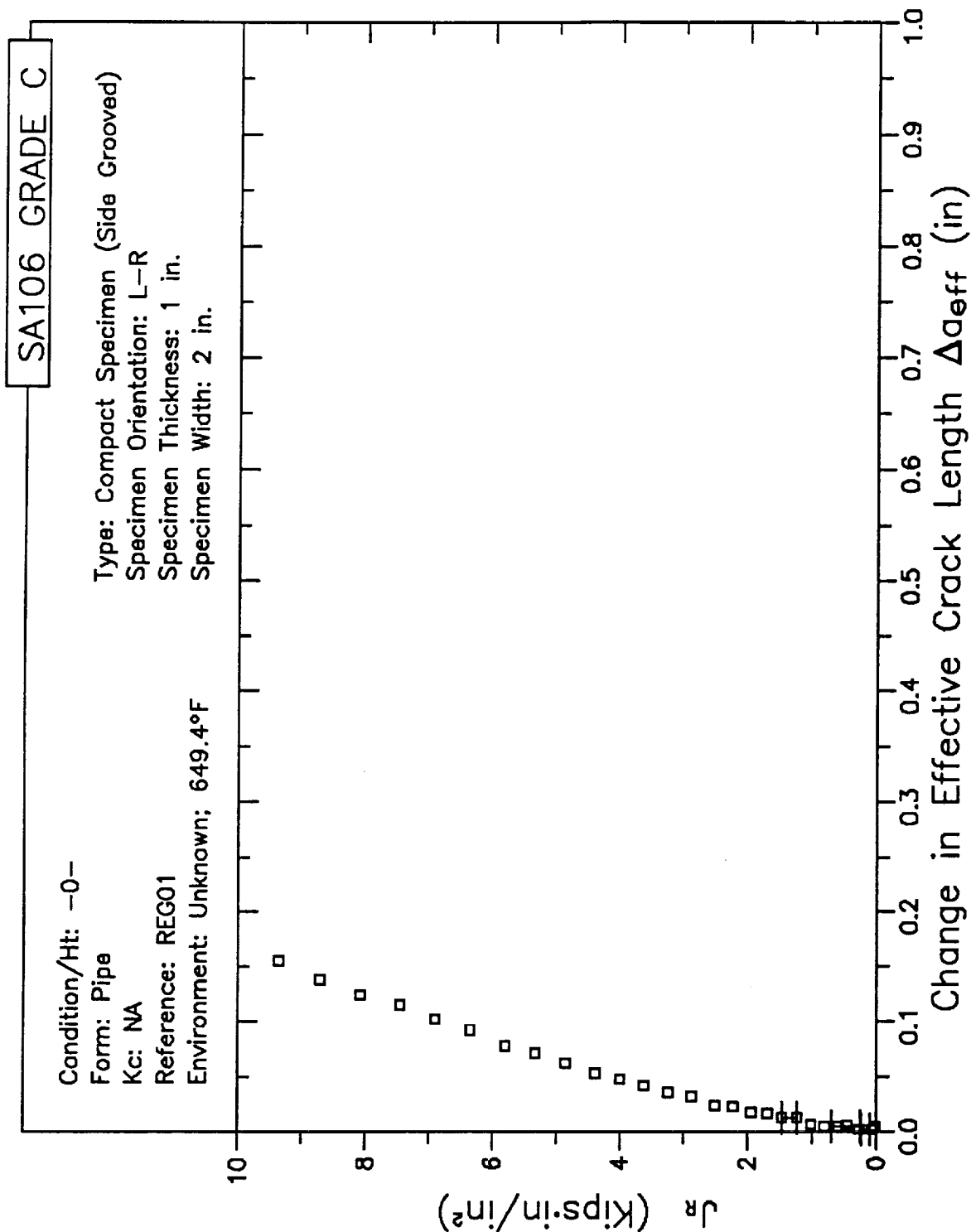
Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG01  
Environment: Unknown; 649.4°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 2 in.  
Specimen Width: 4 in.





# RESISTANCE CURVE



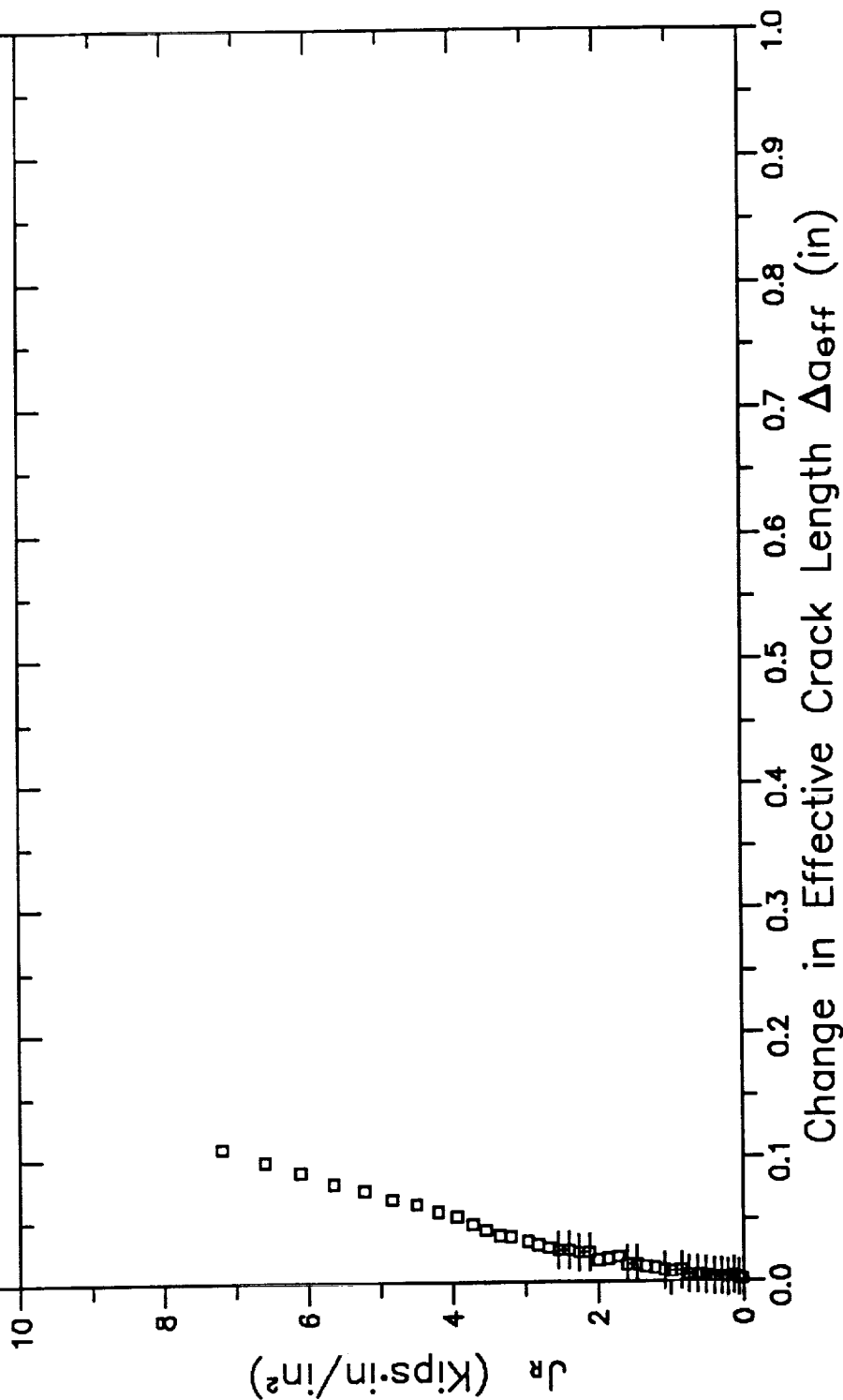
B3-553

# RESISTANCE CURVE

SA106 GRADE C

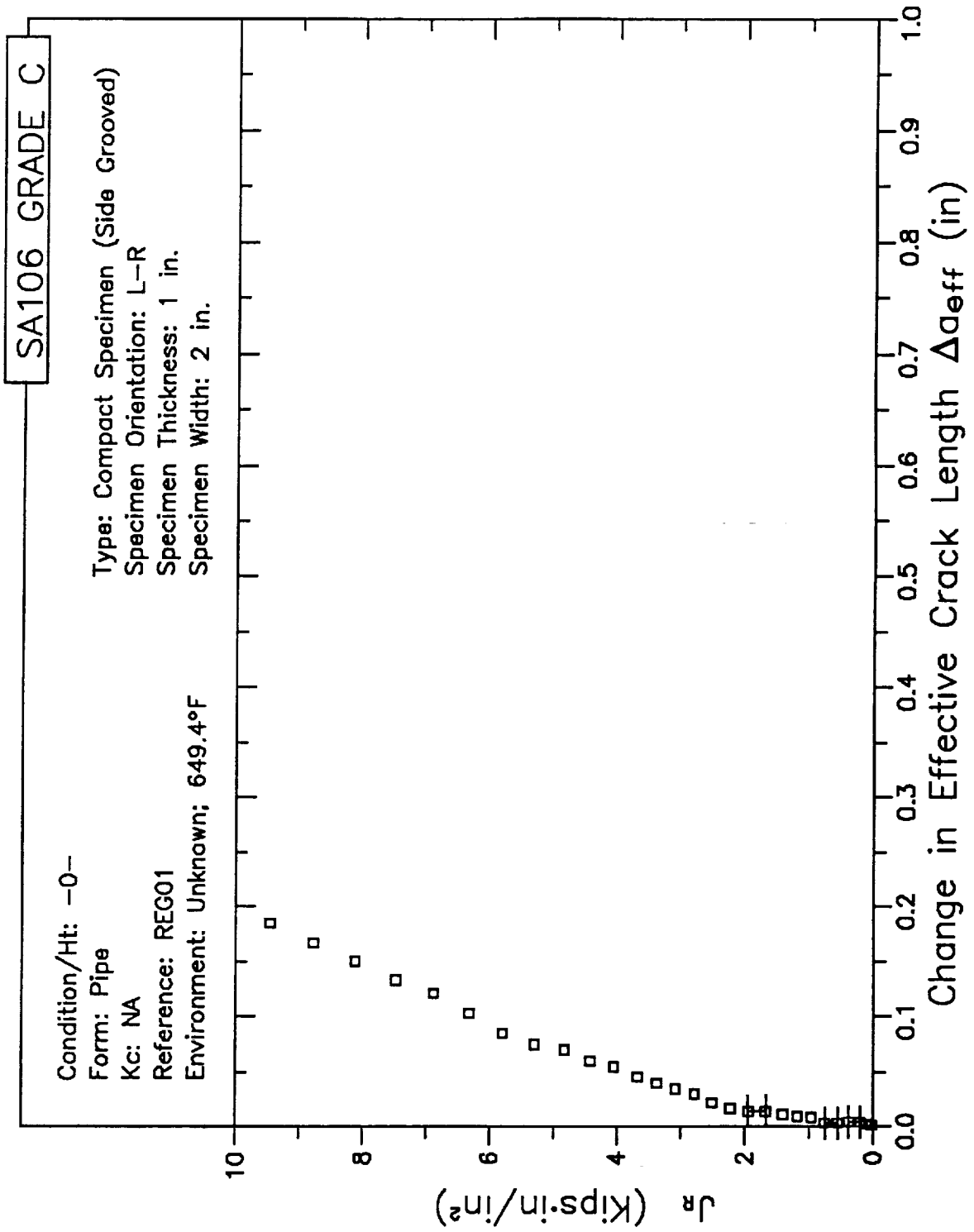
Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG01  
Environment: Unknown; 649.4°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-R  
Specimen Thickness: 1 in.  
Specimen Width: 2 in.



B3-554

# RESISTANCE CURVE

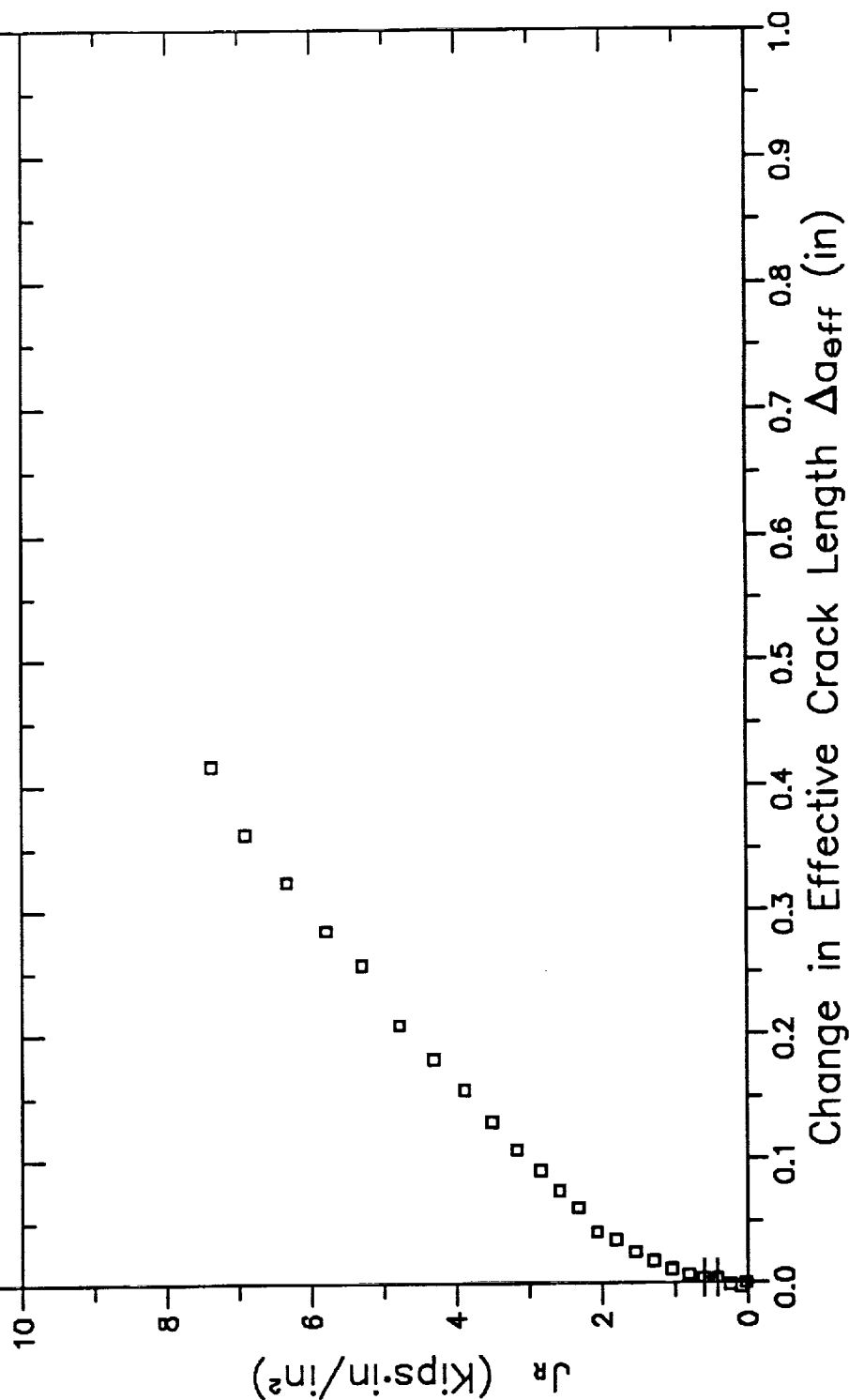


# RESISTANCE CURVE

SA106 GRADE C

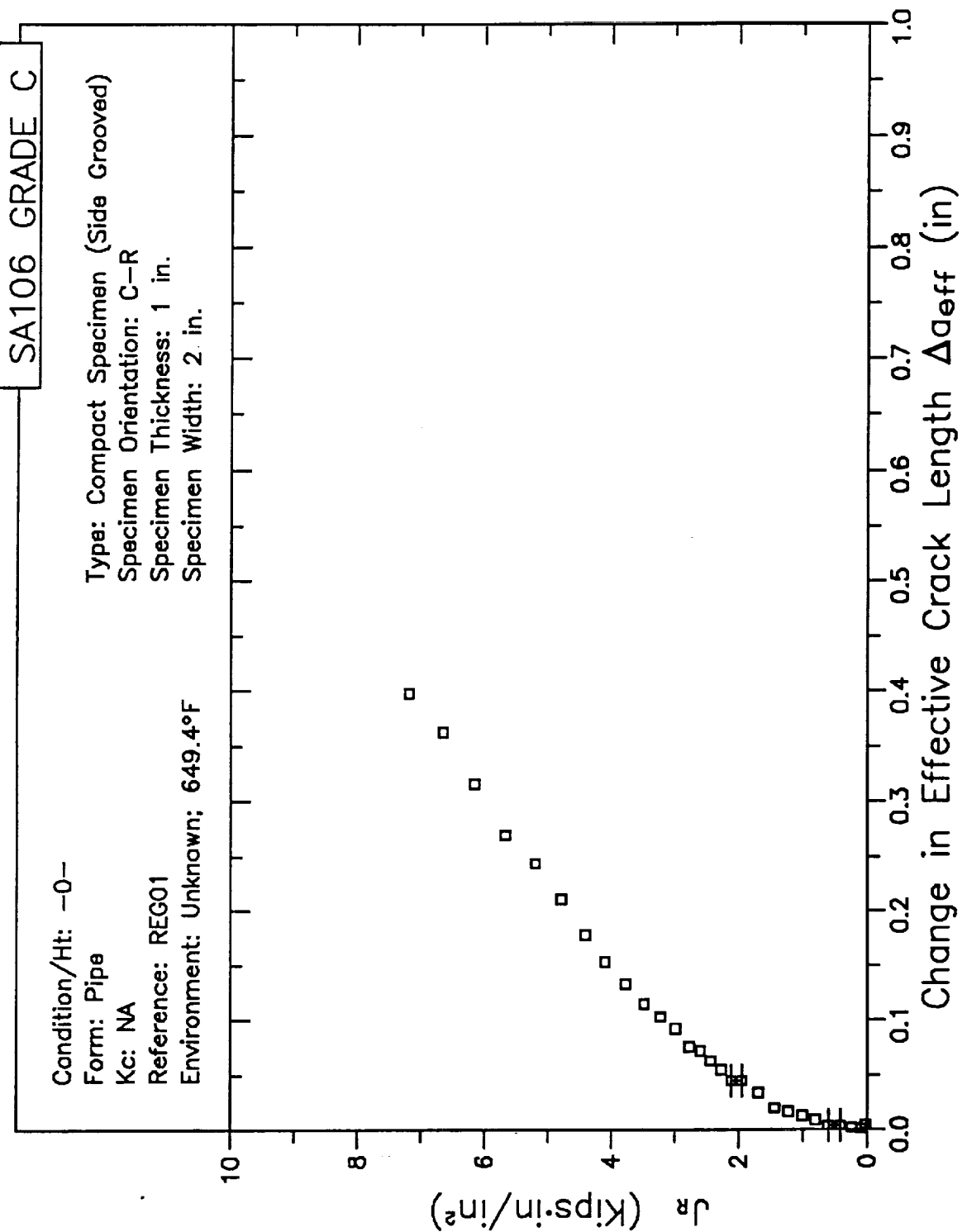
Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG01  
Environment: Unknown; 649.4°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: C-R  
Specimen Thickness: 1 in.  
Specimen Width: 2 in.

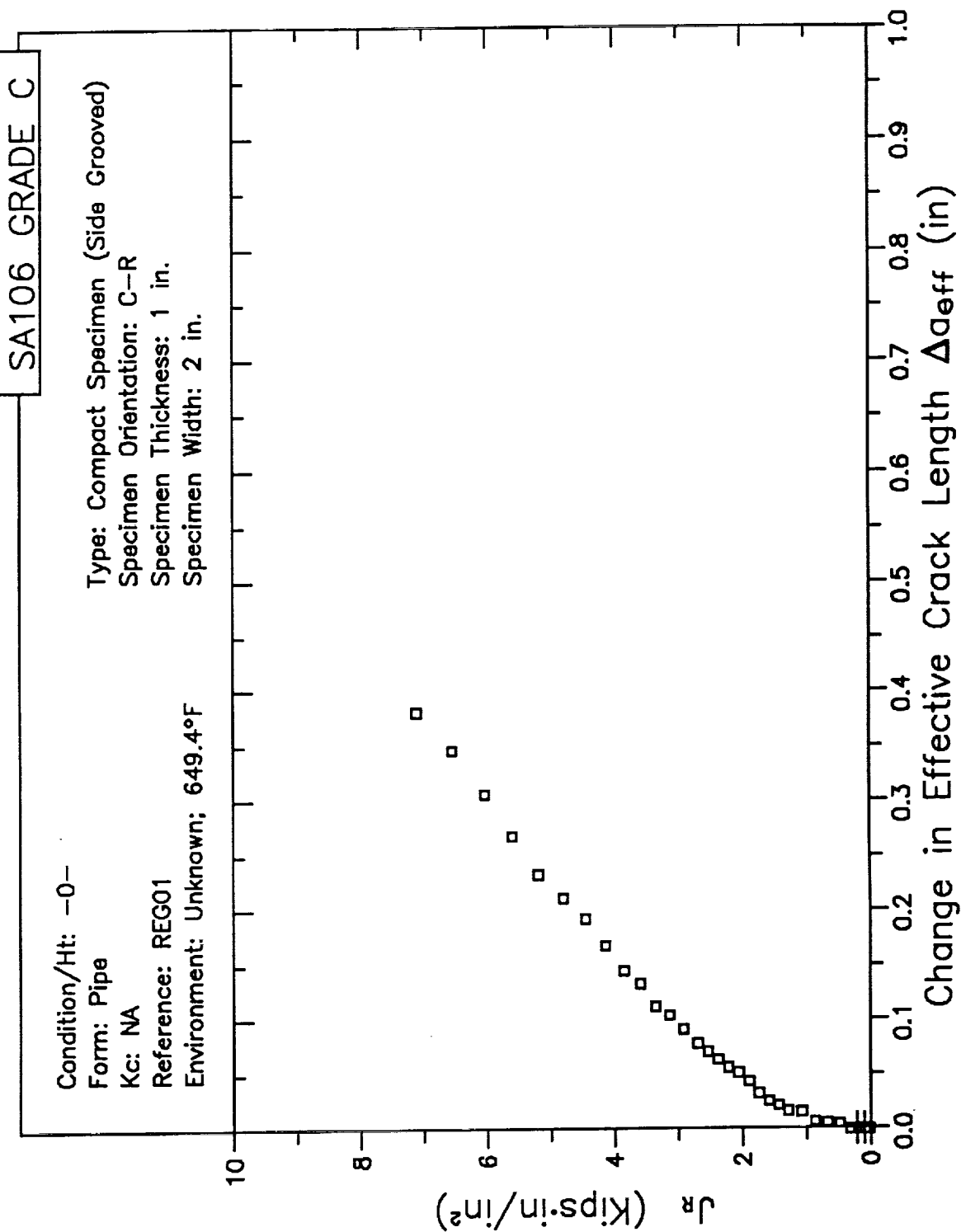


B3-556

# RESISTANCE CURVE

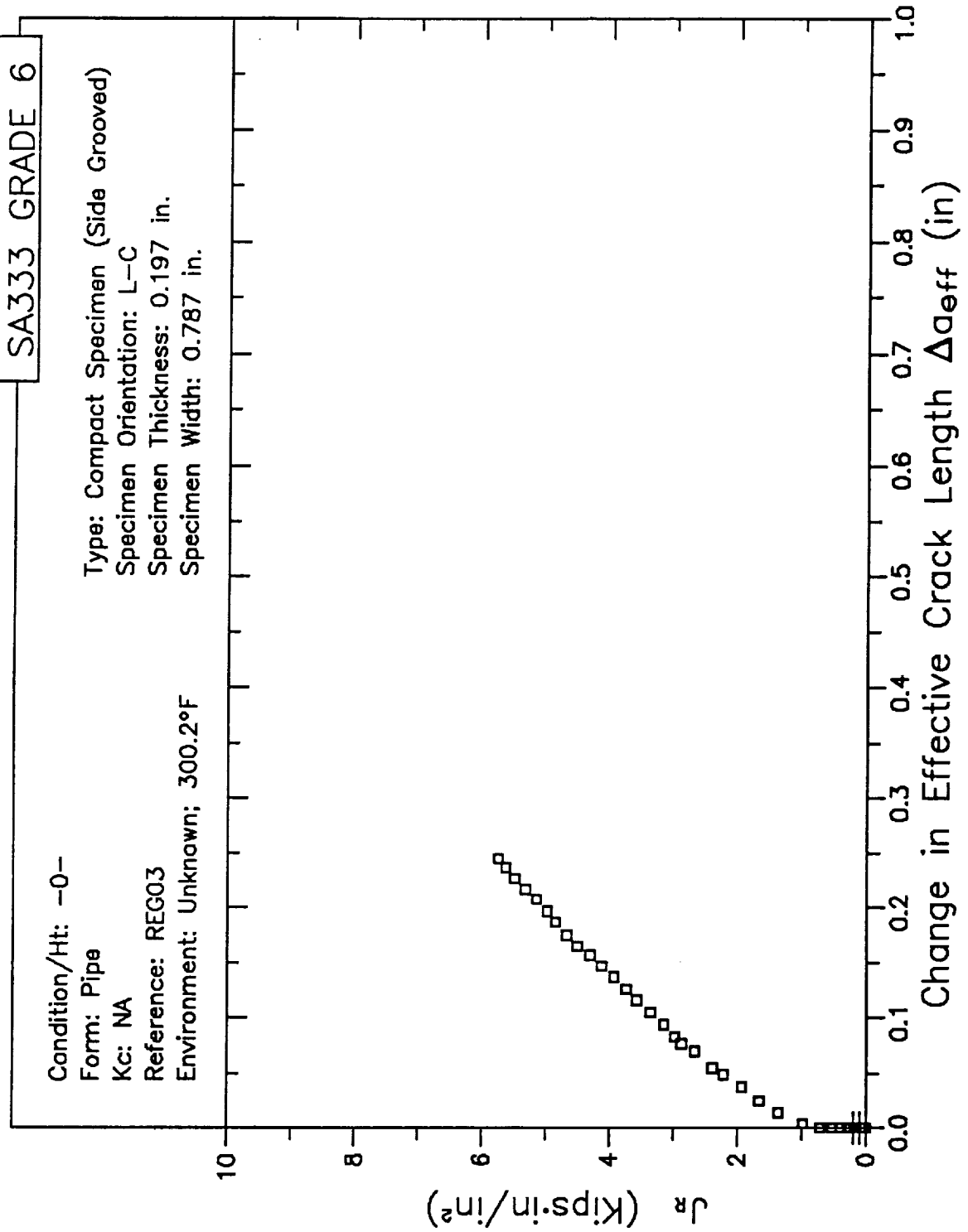


# RESISTANCE CURVE



B3-558

# RESISTANCE CURVE



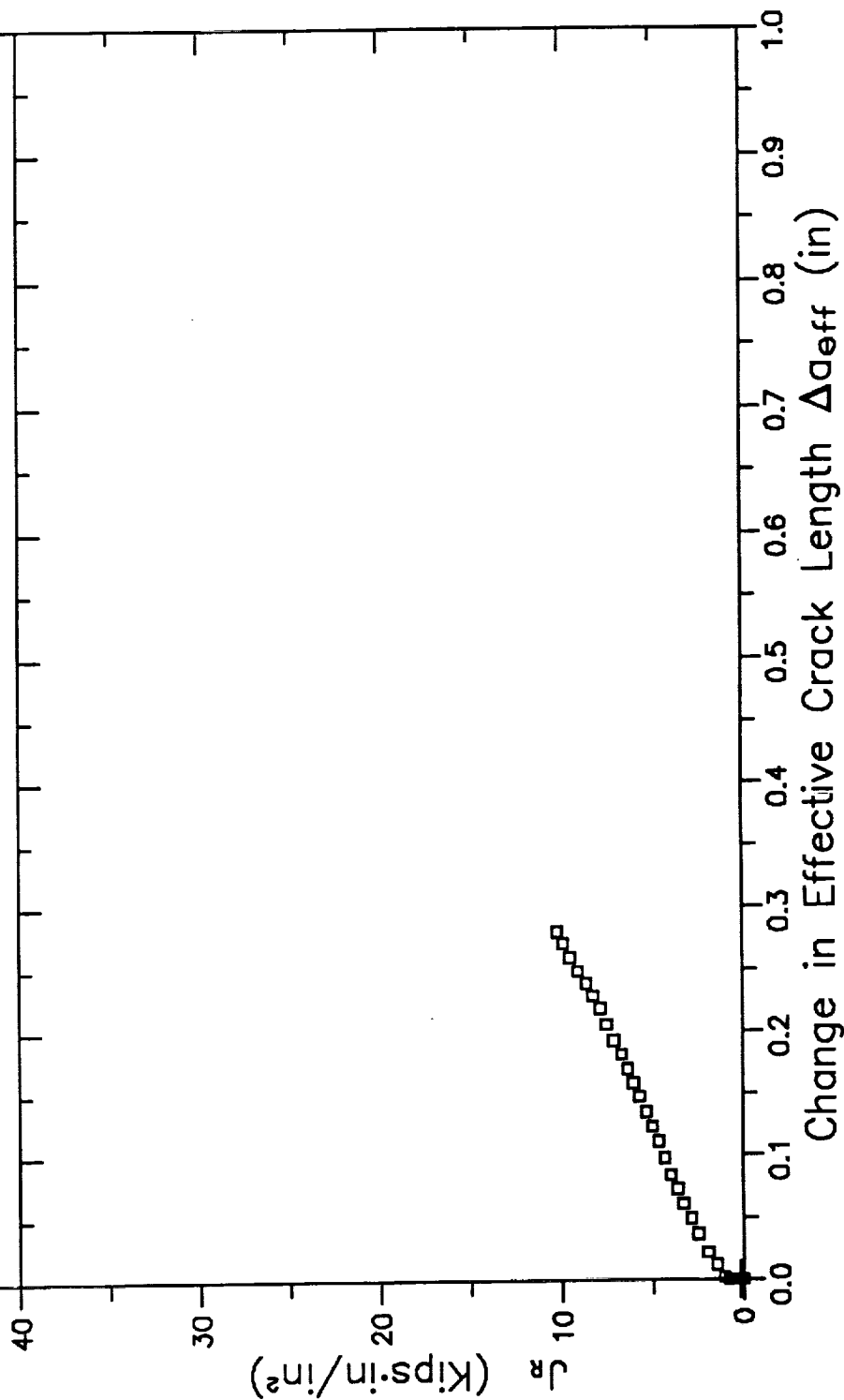
B3-559

# RESISTANCE CURVE

SA333 GRADE 6

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG03  
Environment: Unknown; 300.2°F

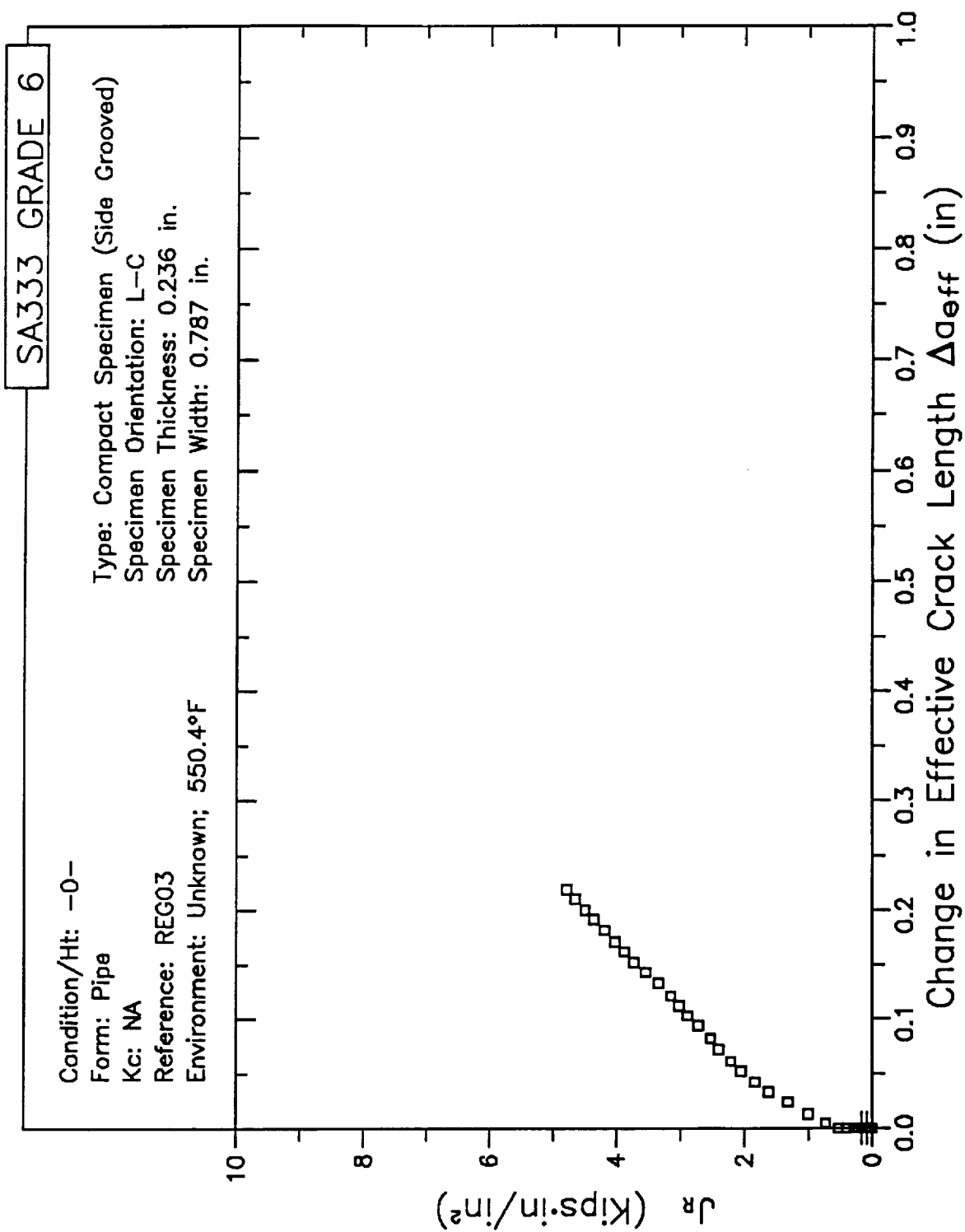
Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 0.197 in.  
Specimen Width: 0.787 in.



B3-560



# RESISTANCE CURVE

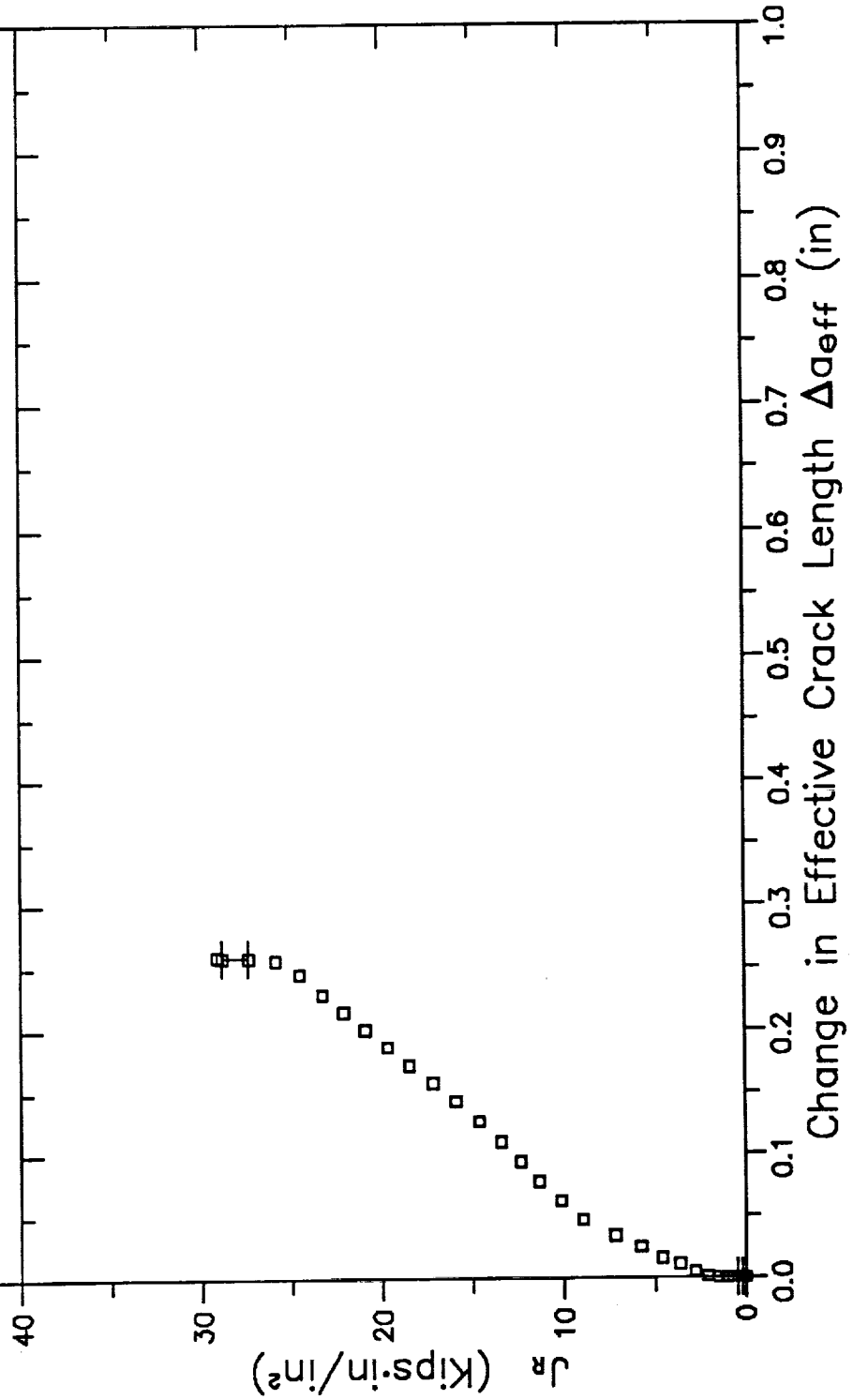


# RESISTANCE CURVE

SA333 GRADE 6

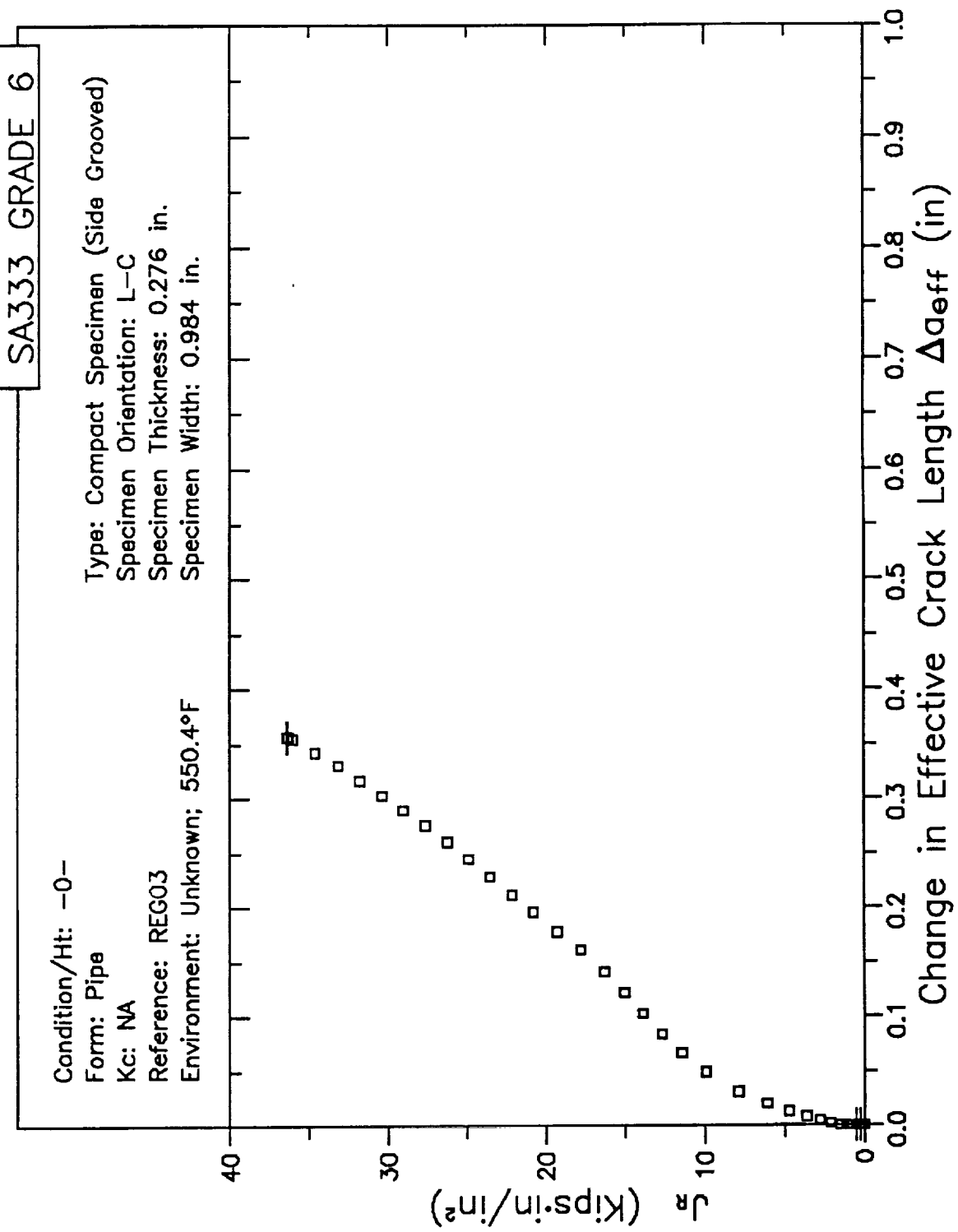
Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REGO3  
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 0.276 in.  
Specimen Width: 0.984 in.



B3-562

# RESISTANCE CURVE



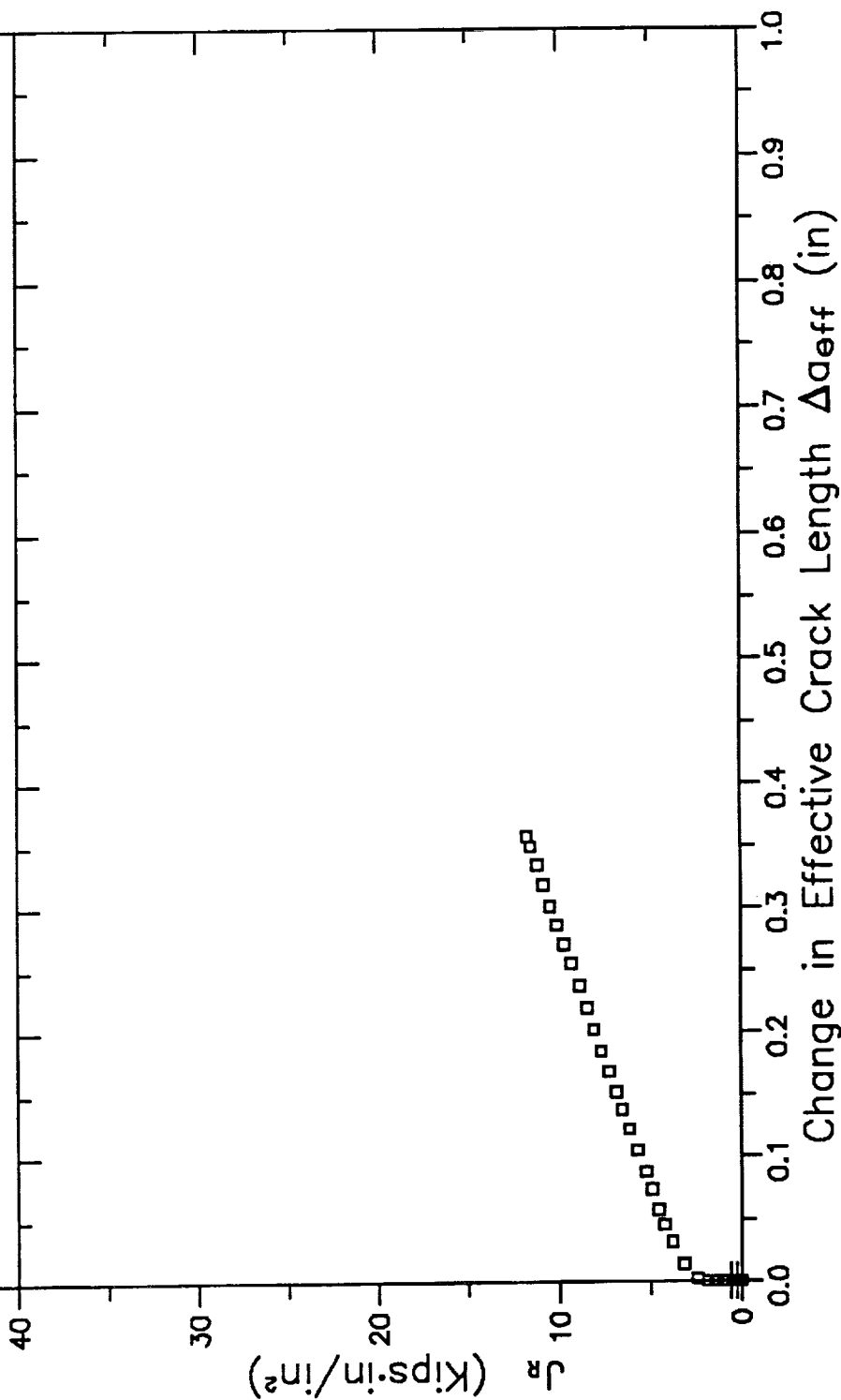
B3-563

# RESISTANCE CURVE

SA333 GRADE 6

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG03  
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 0.276 in.  
Specimen Width: 0.984 in.



# RESISTANCE CURVE

SA333 GRADE 6

Condition/Ht: -0-

Form: Pipe

Kc: NA

Reference: REG03

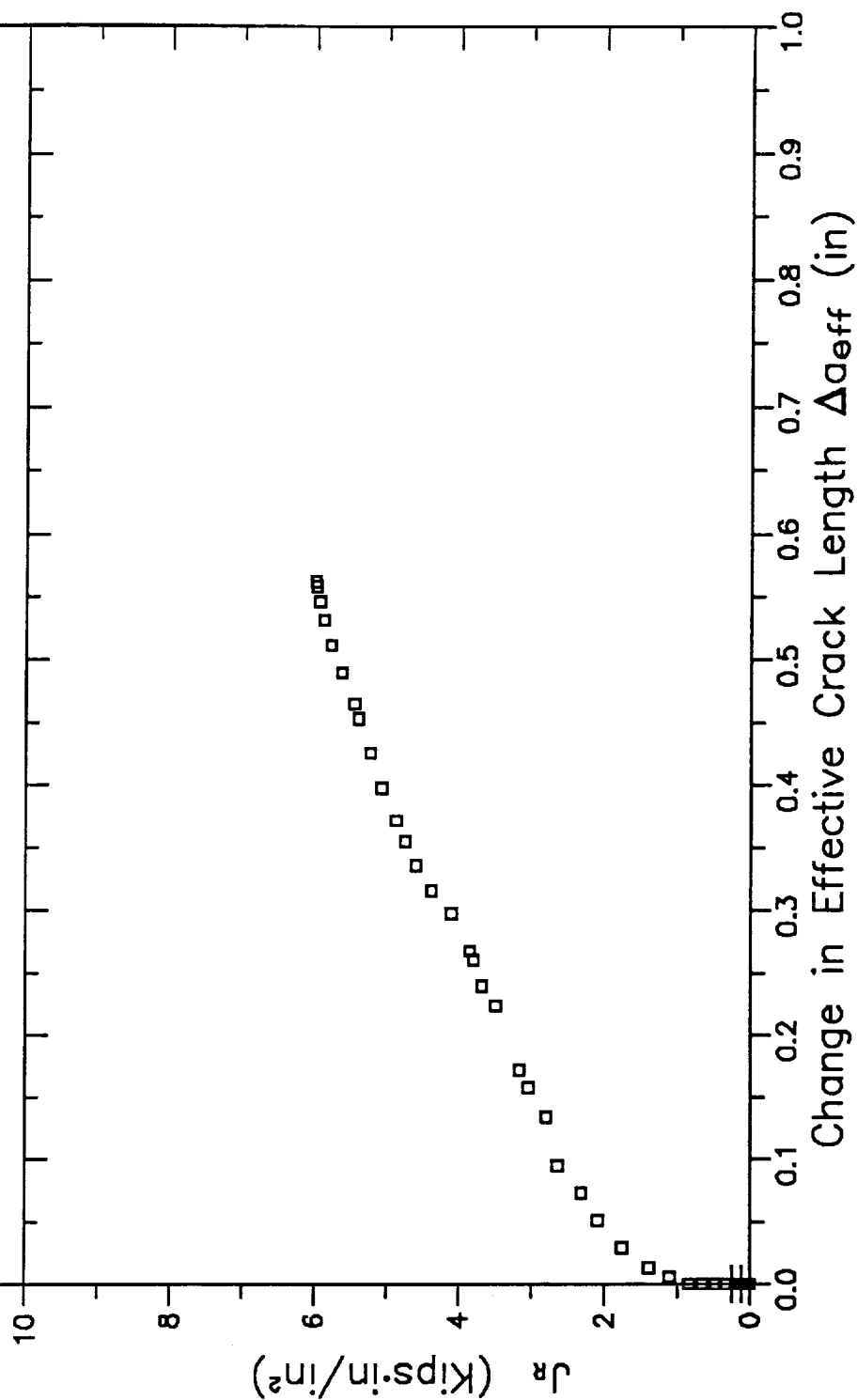
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)

Specimen Orientation: L-C

Specimen Thickness: 0.512 in.

Specimen Width: 1.969 in.

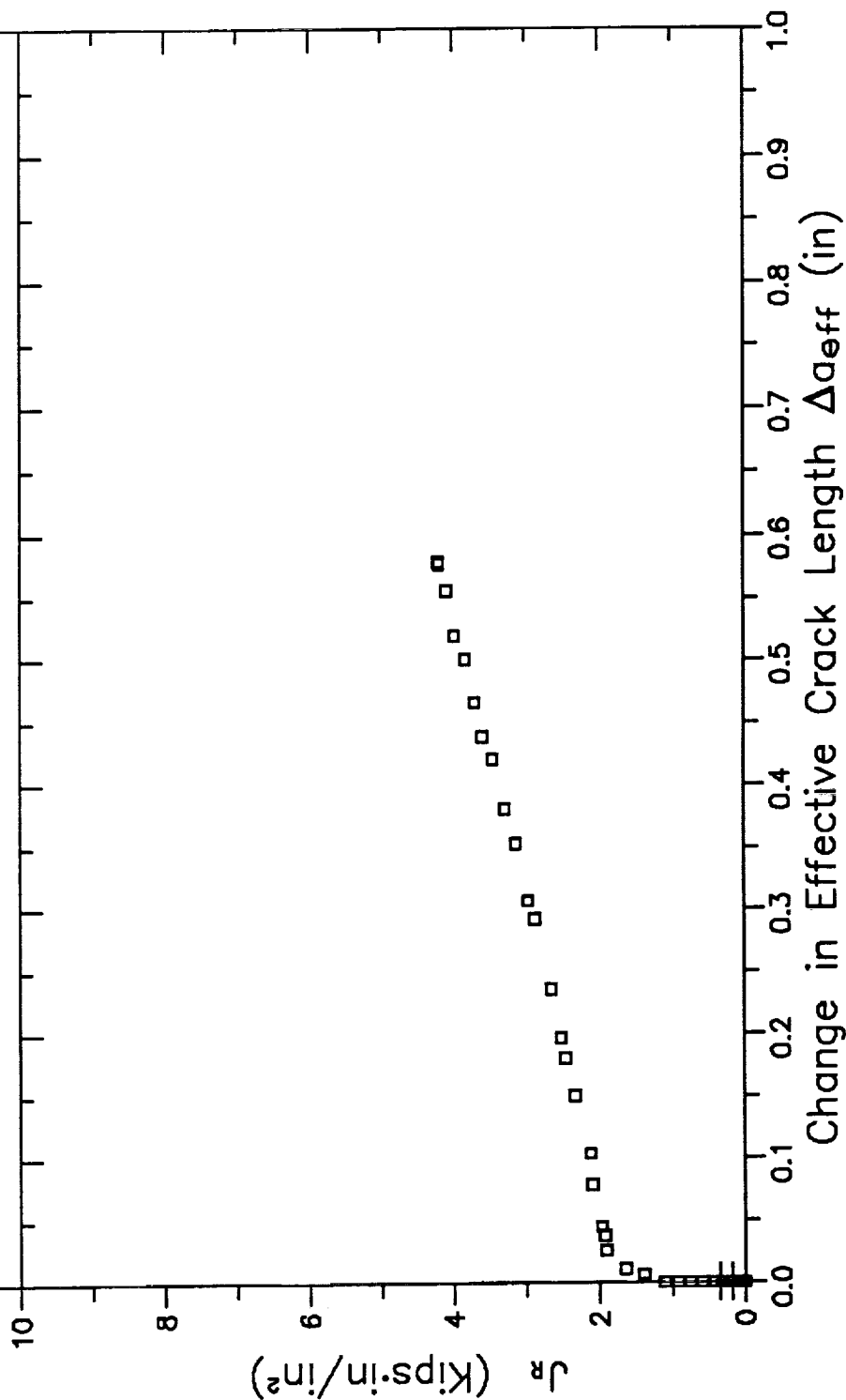


# RESISTANCE CURVE

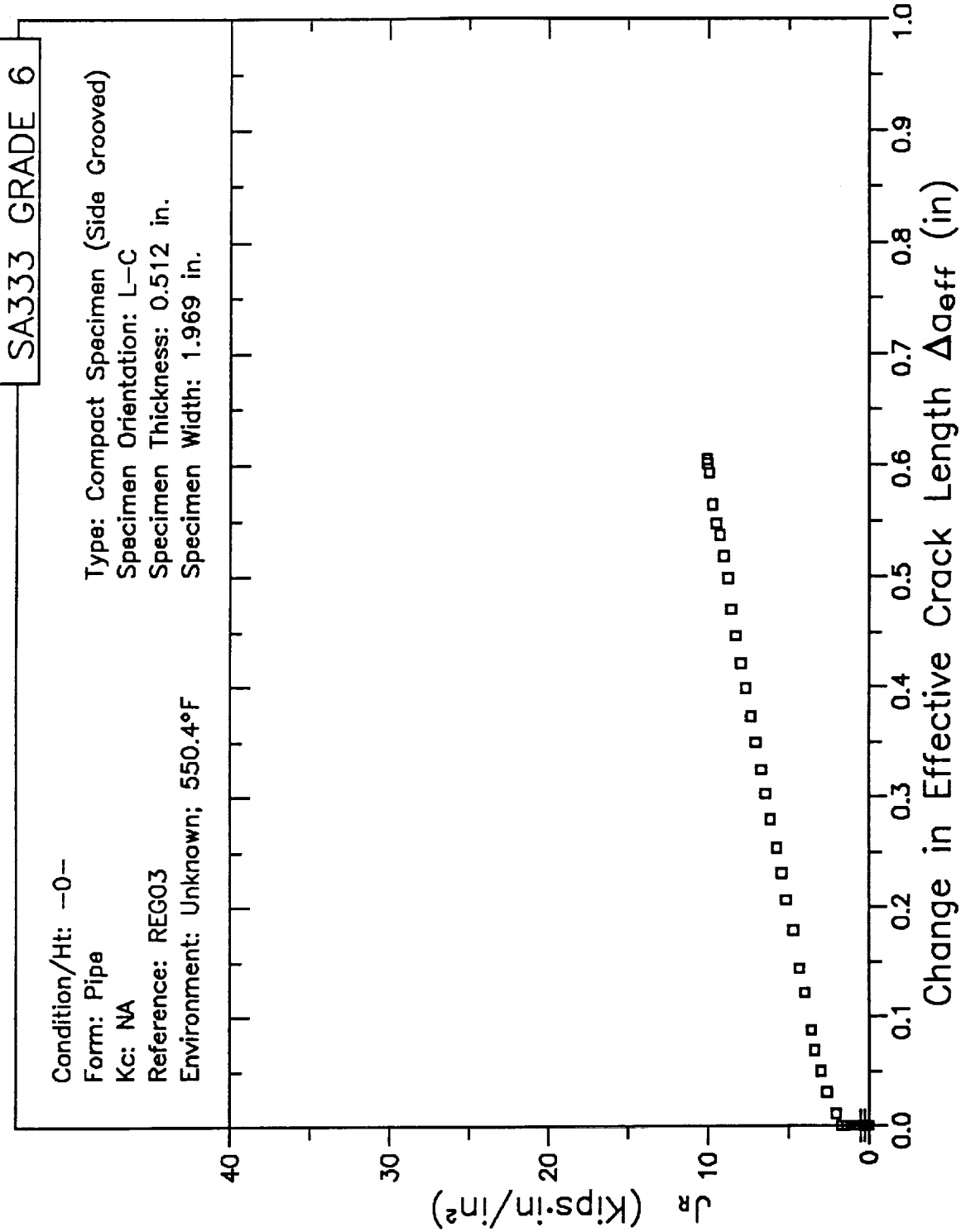
SA333 GRADE 6

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG03  
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 0.512 in.  
Specimen Width: 1.969 in.



# RESISTANCE CURVE

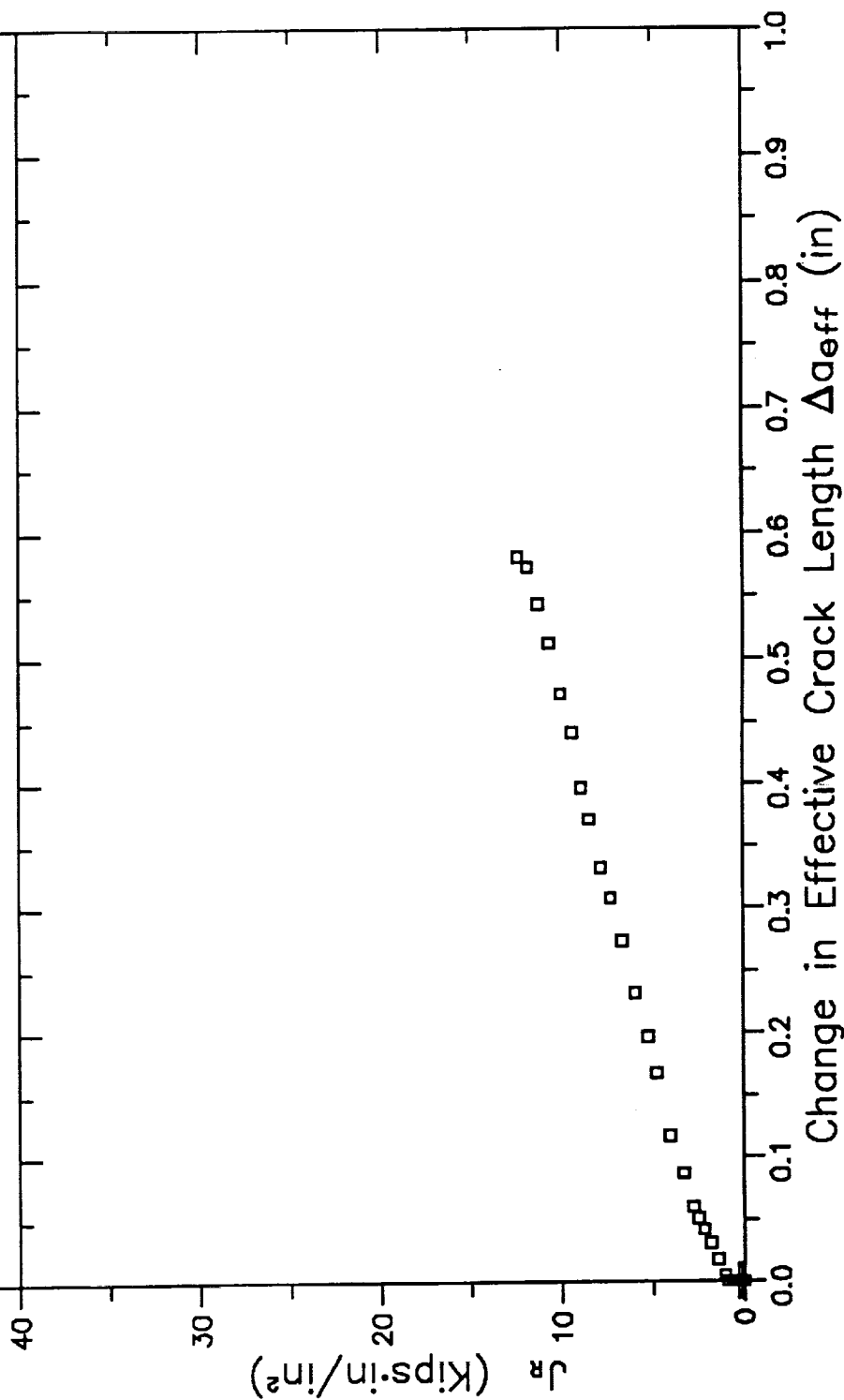


# RESISTANCE CURVE

SA333 GRADE 6

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG03  
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 0.512 in.  
Specimen Width: 1.969 in.



B3-568



# RESISTANCE CURVE

SA333 GRADE 6

Condition/Ht: -0-

Form: Pipe

Kc: NA

Reference: REG03

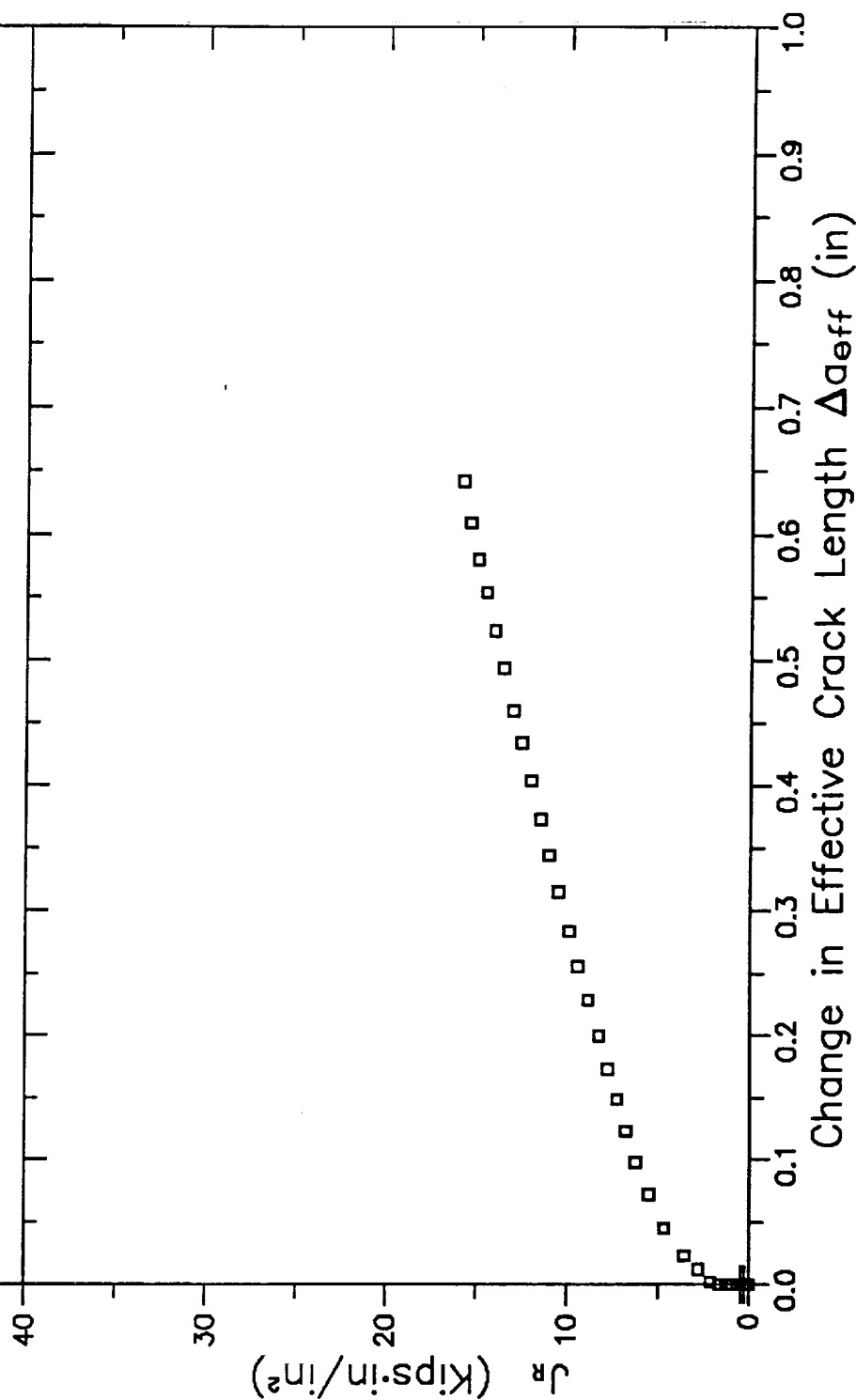
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)

Specimen Orientation: L-C

Specimen Thickness: 0.591 in.

Specimen Width: 1.969 in.

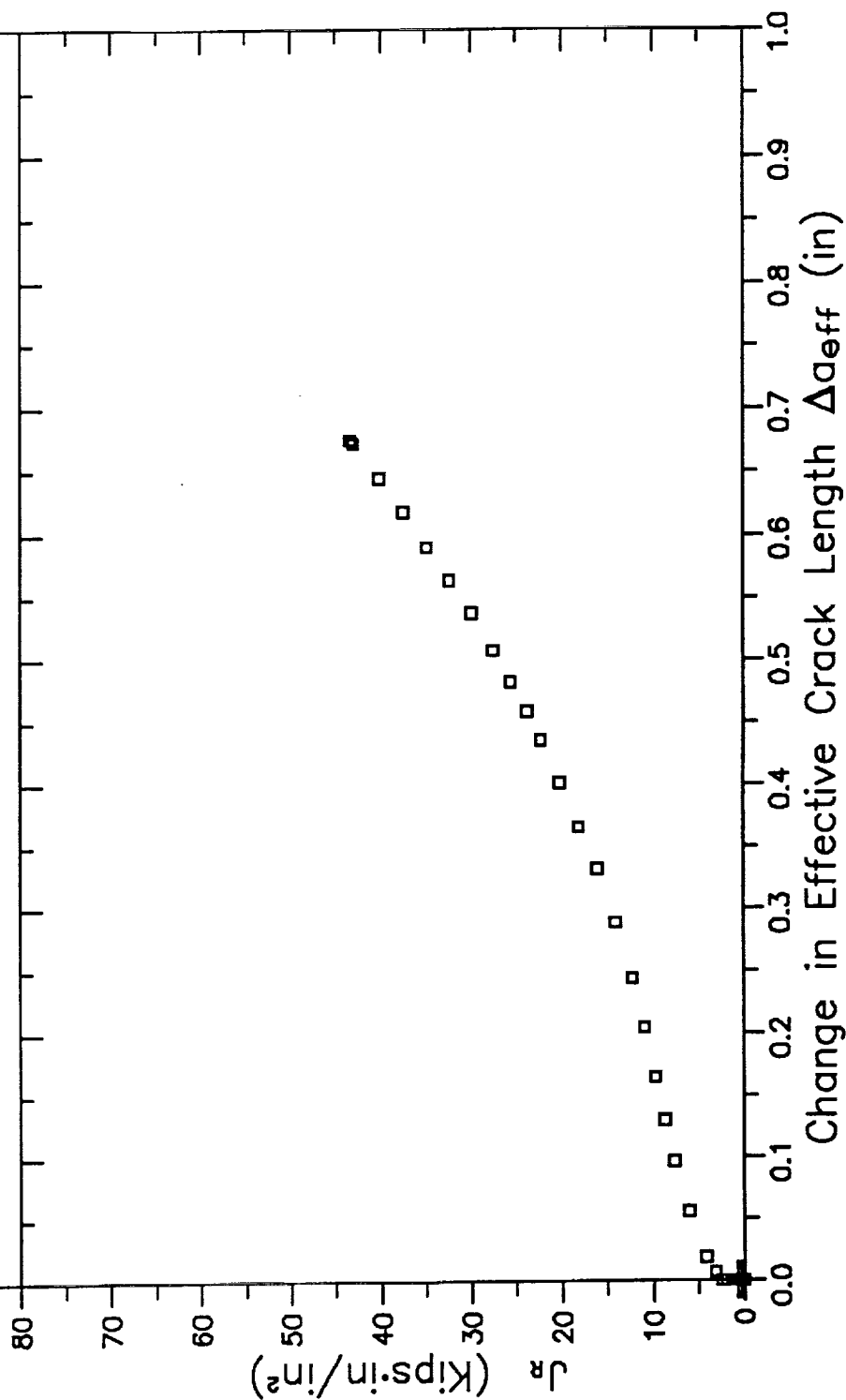


# RESISTANCE CURVE

SA333 GRADE 6

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG03  
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 0.591 in.  
Specimen Width: 1.969 in.



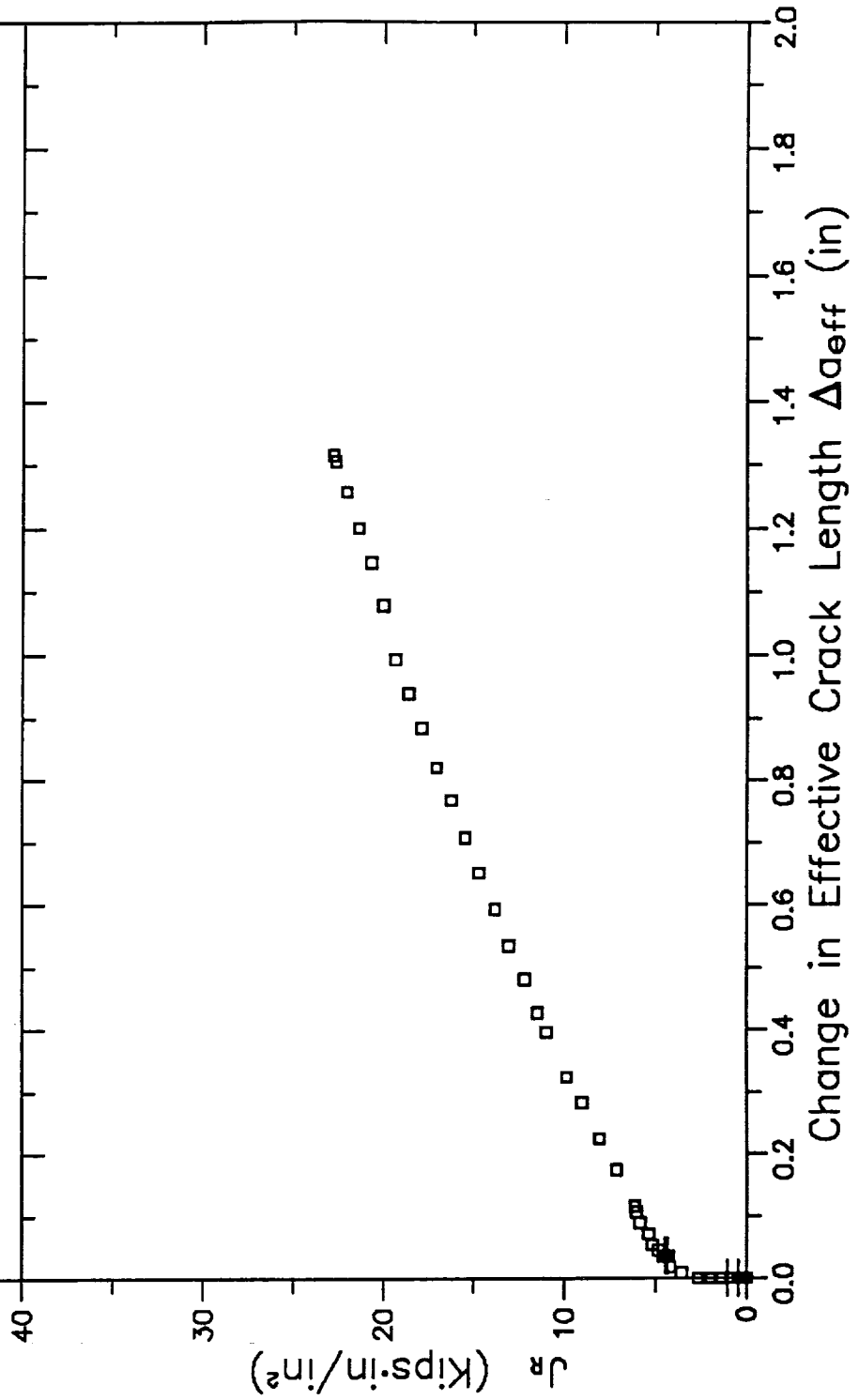
B3-570

# RESISTANCE CURVE

SA333 GRADE 6

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG03  
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 1.181 in.  
Specimen Width: 4.016 in.

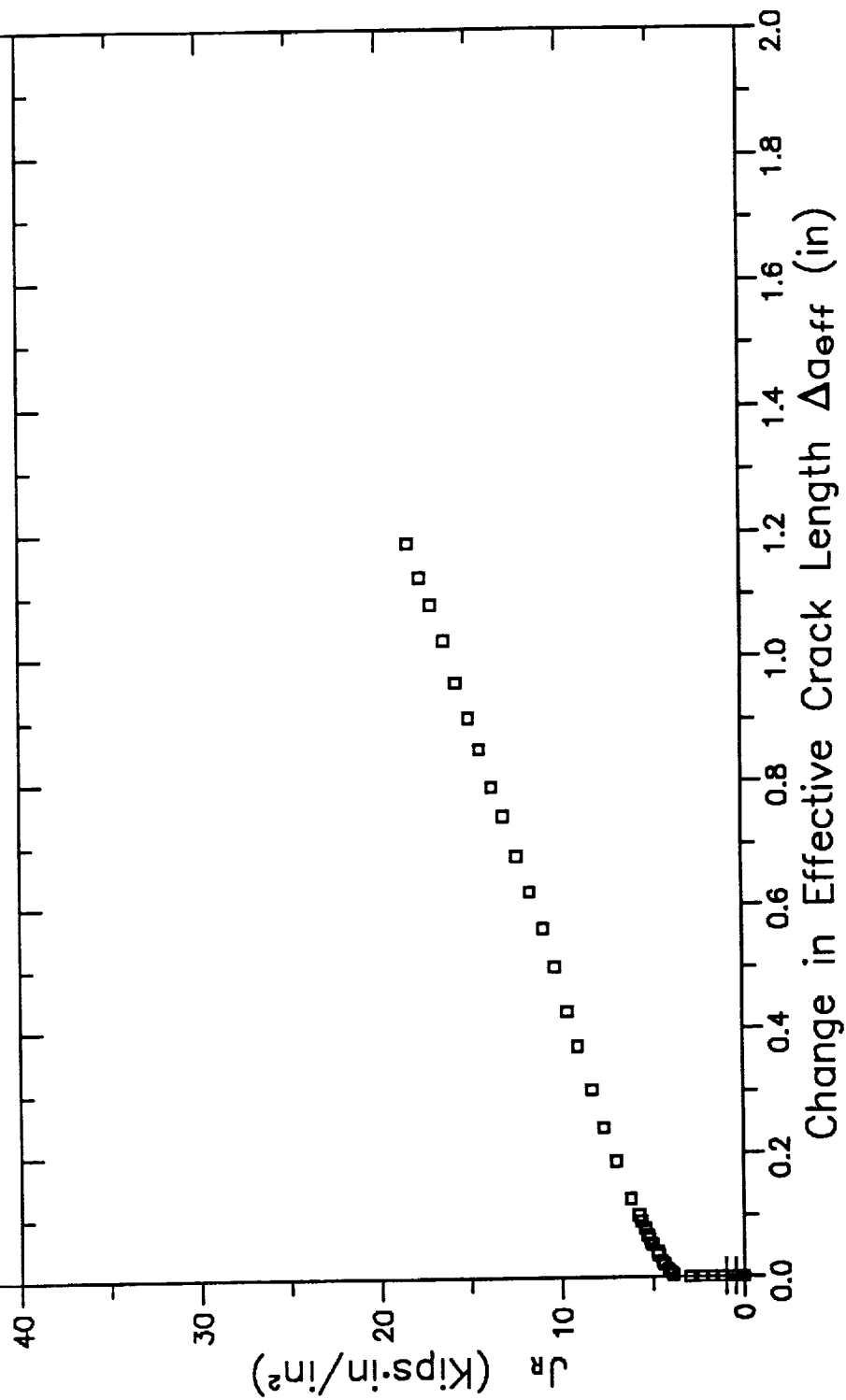


# RESISTANCE CURVE

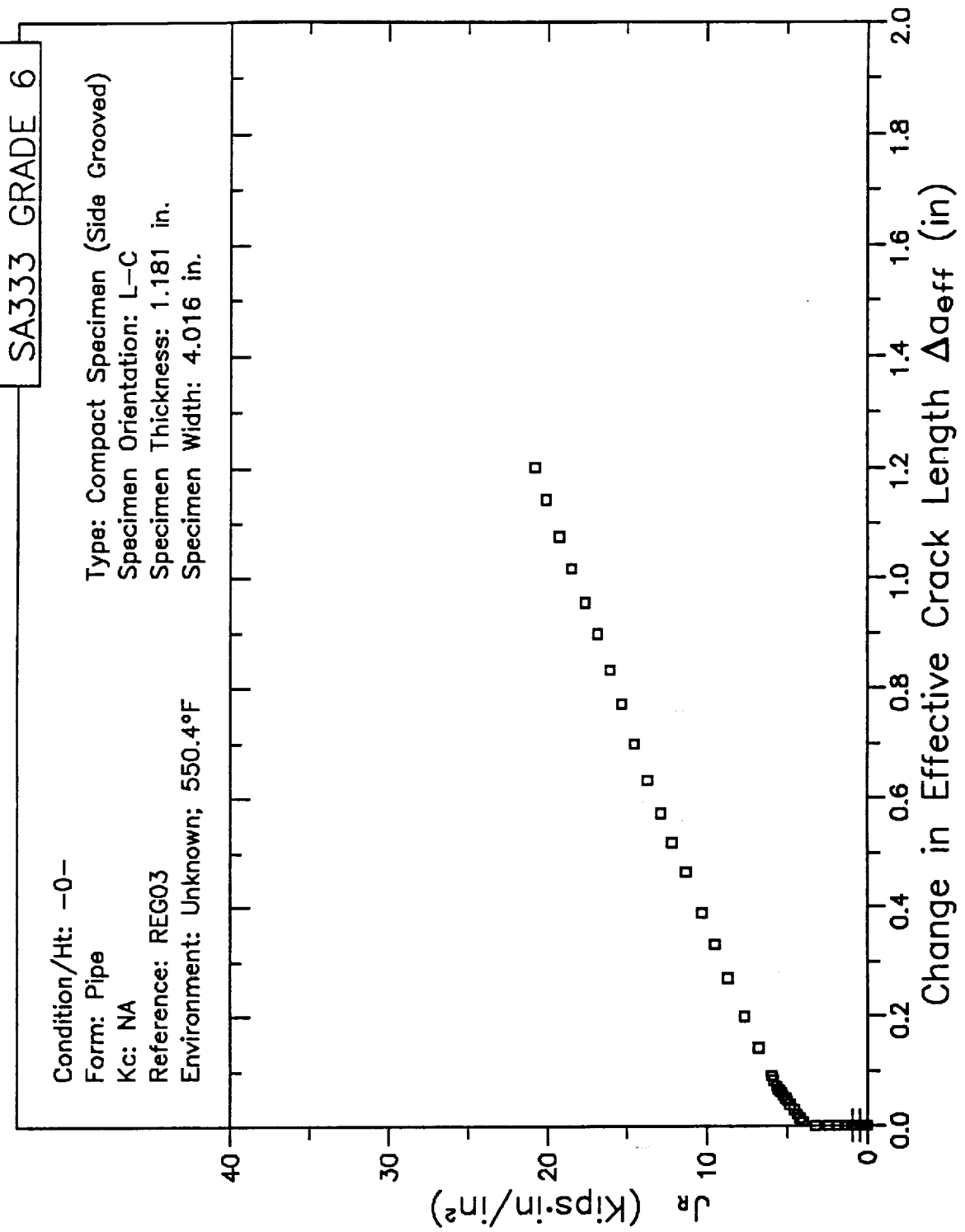
SA333 GRADE 6

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG03  
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 1.181 in.  
Specimen Width: 4.016 in.



# RESISTANCE CURVE

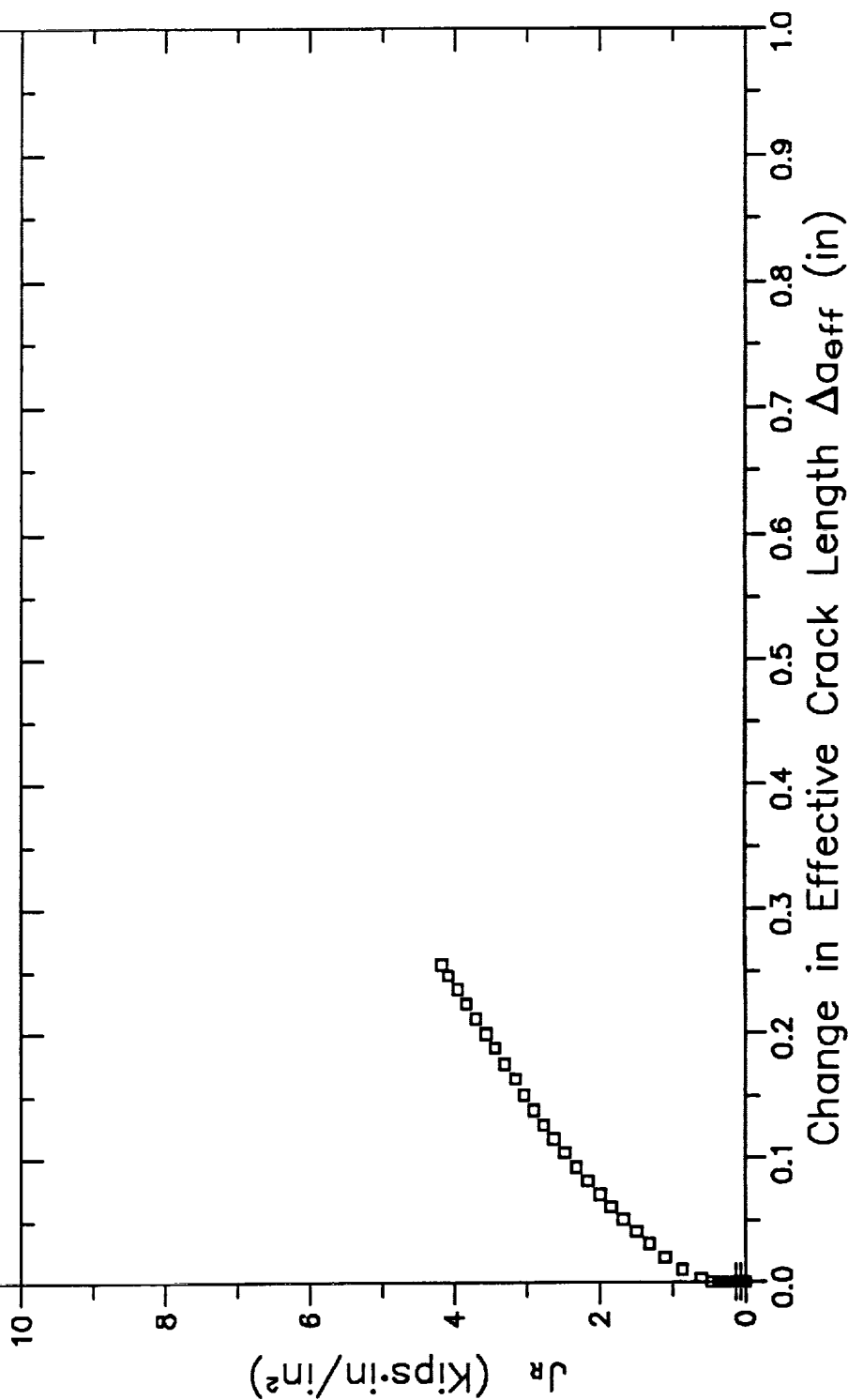


# RESISTANCE CURVE

SA333 GRADE 6

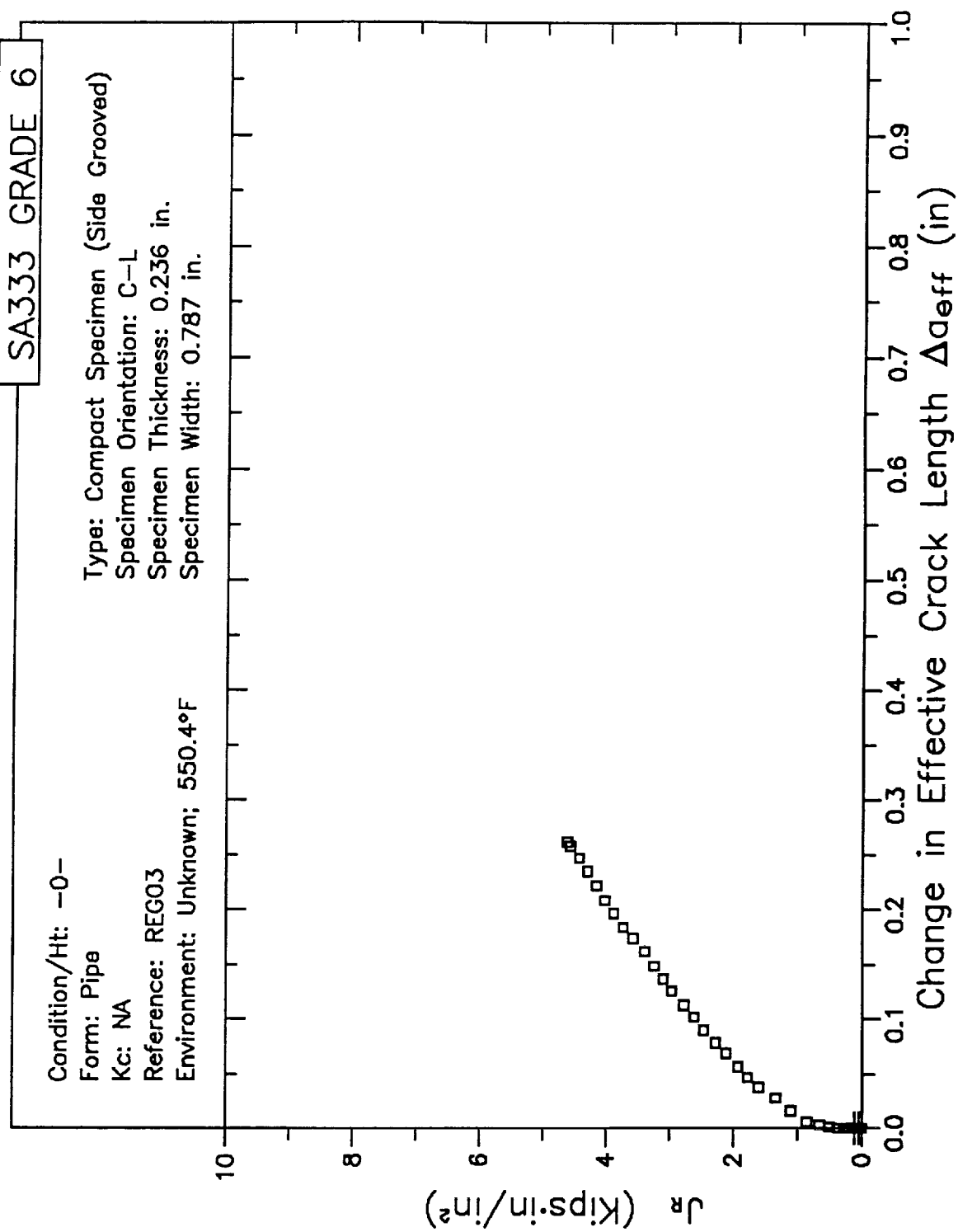
Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG03  
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: C-L  
Specimen Thickness: 0.236 in.  
Specimen Width: 0.787 in.



B3-574

# RESISTANCE CURVE

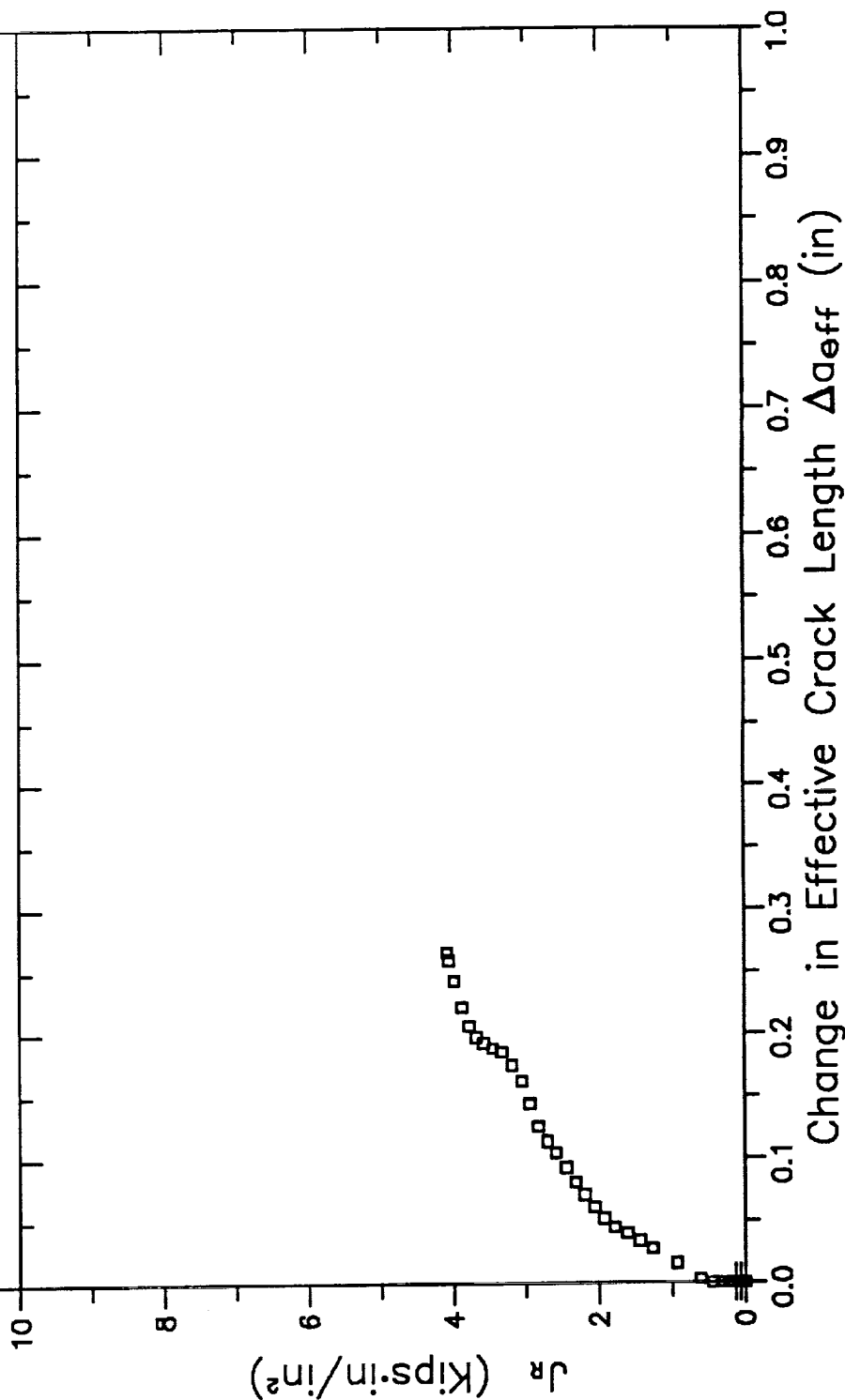


# RESISTANCE CURVE

SA333 GRADE 6

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG03  
Environment: Unknown; 550.4°F

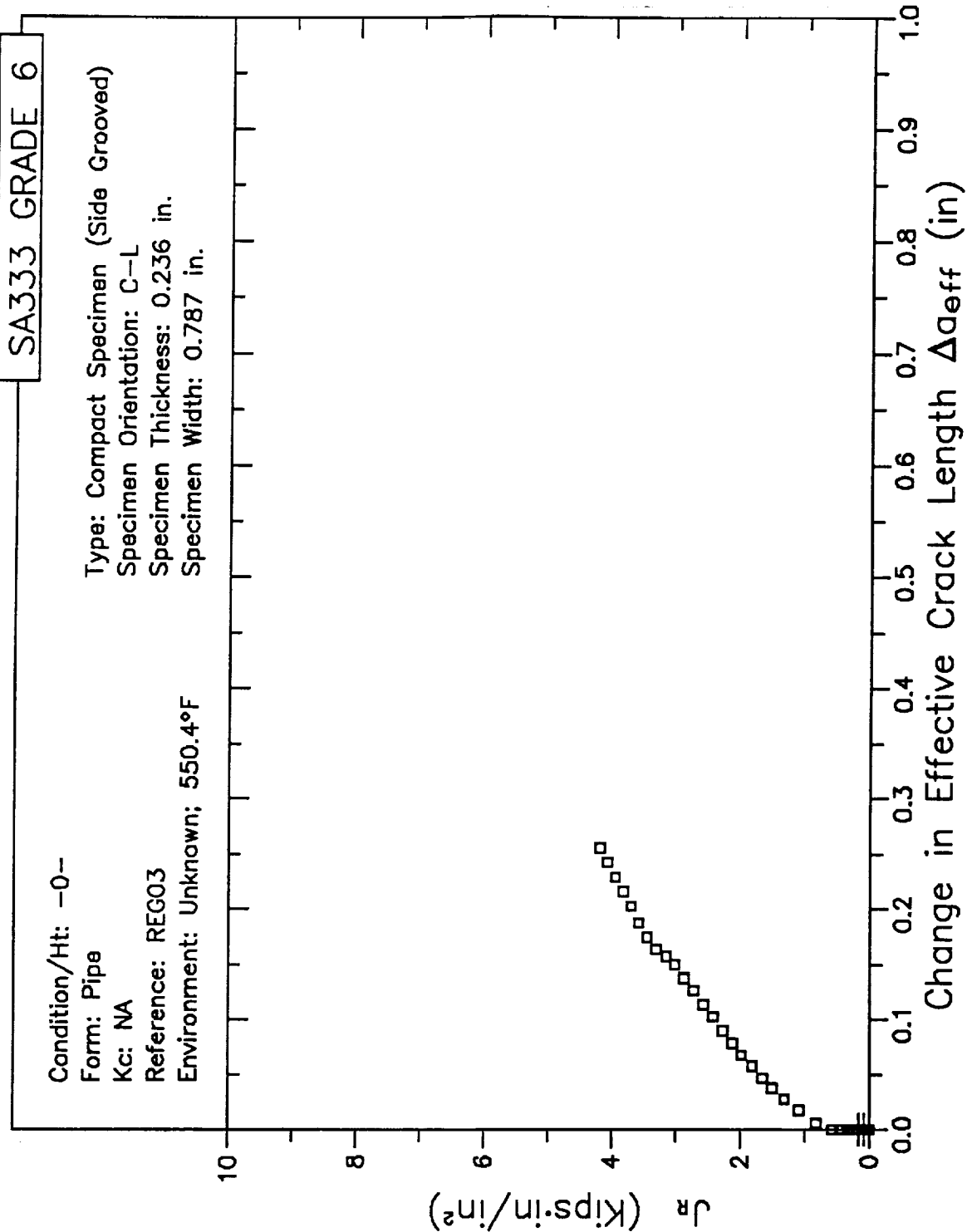
Type: Compact Specimen (Side Grooved)  
Specimen Orientation: C-L  
Specimen Thickness: 0.236 in.  
Specimen Width: 0.787 in.



B3-576



# RESISTANCE CURVE

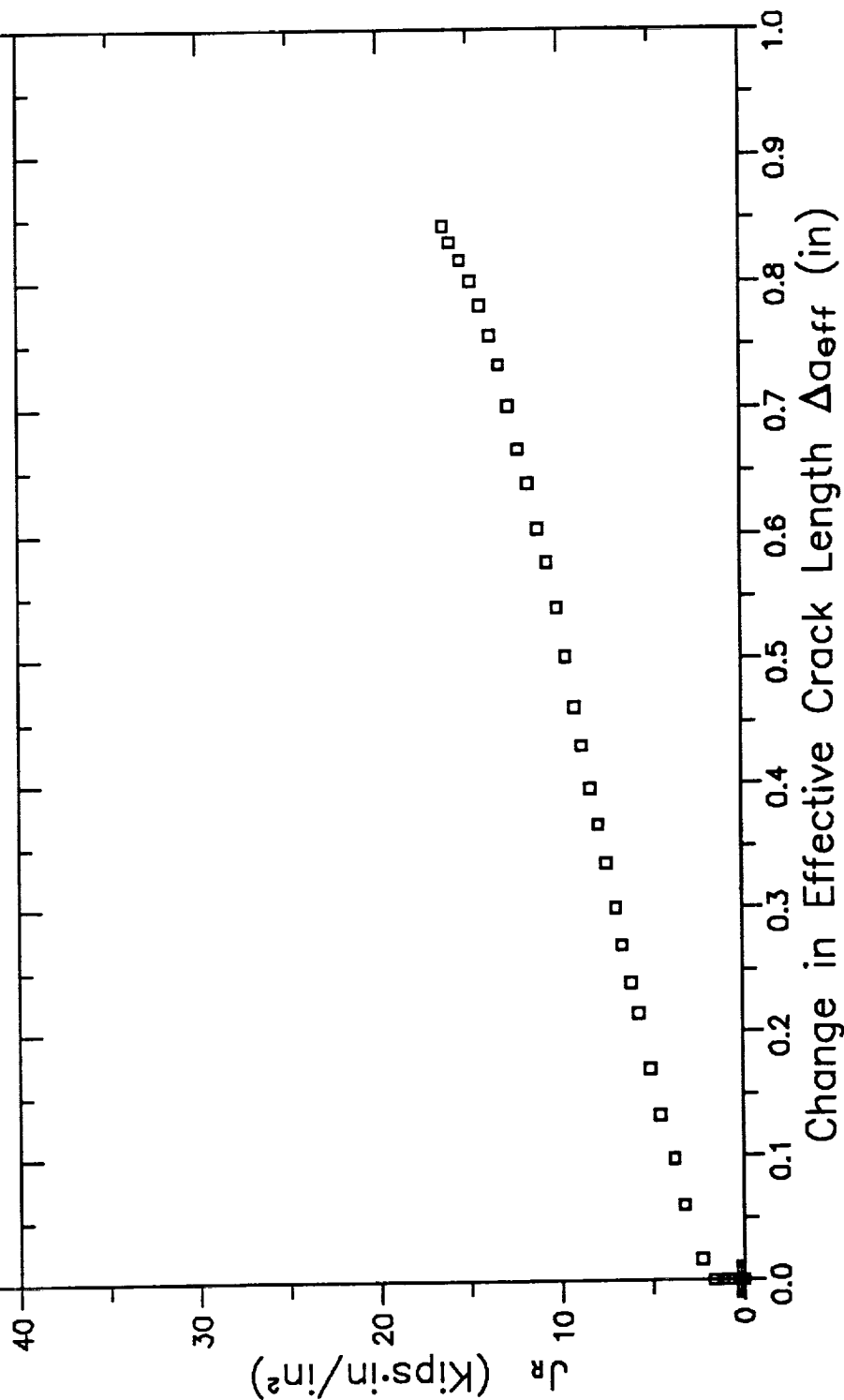


# RESISTANCE CURVE

SA516 GRADE 70

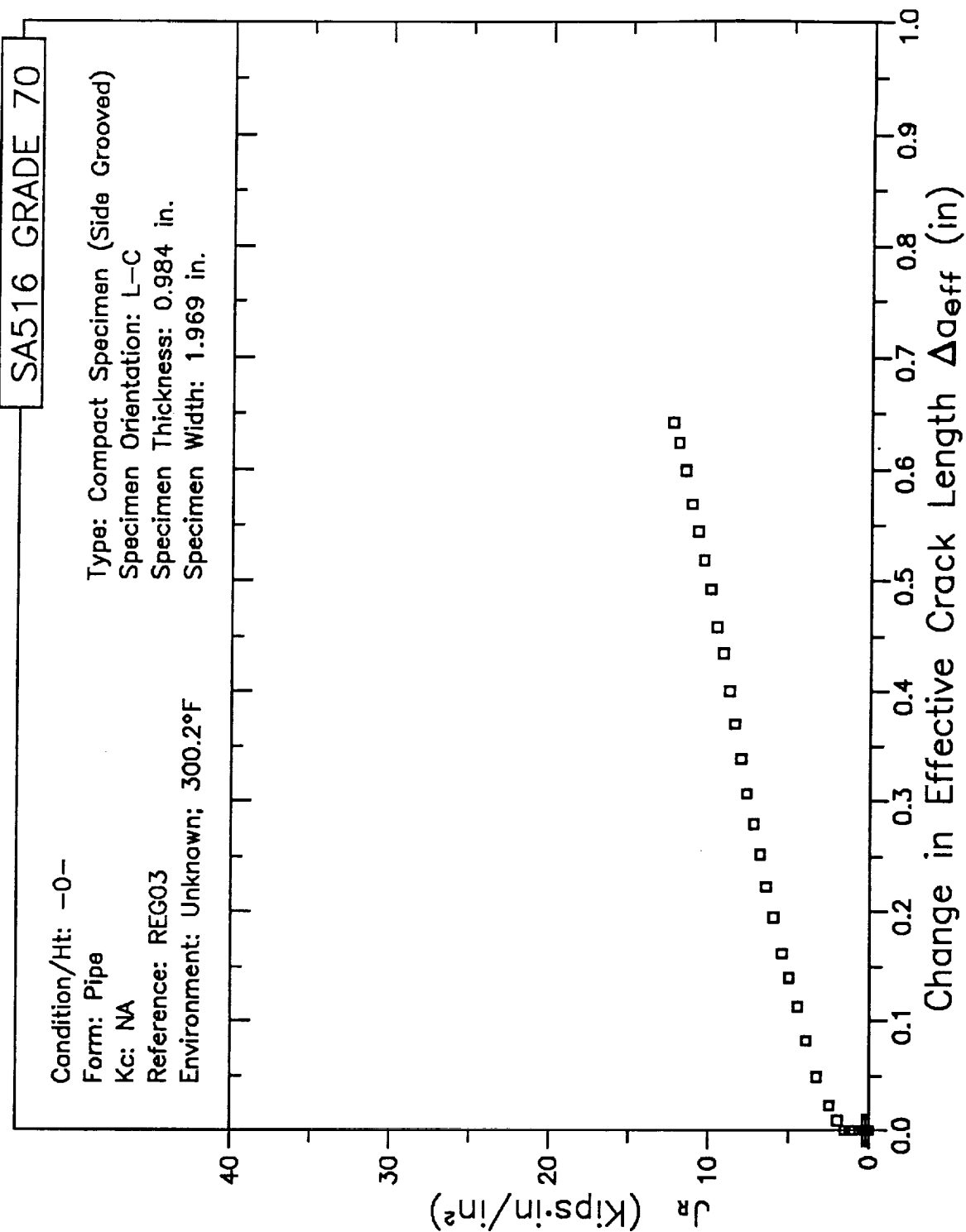
Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG03  
Environment: Unknown; 300.2°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 0.984 in.  
Specimen Width: 1.969 in.



B3-578

# RESISTANCE CURVE



# RESISTANCE CURVE

SA516 GRADE 70

Condition/Ht: -0-

Form: Plate (1 in. thick)

Kc: NA

Reference: REG03

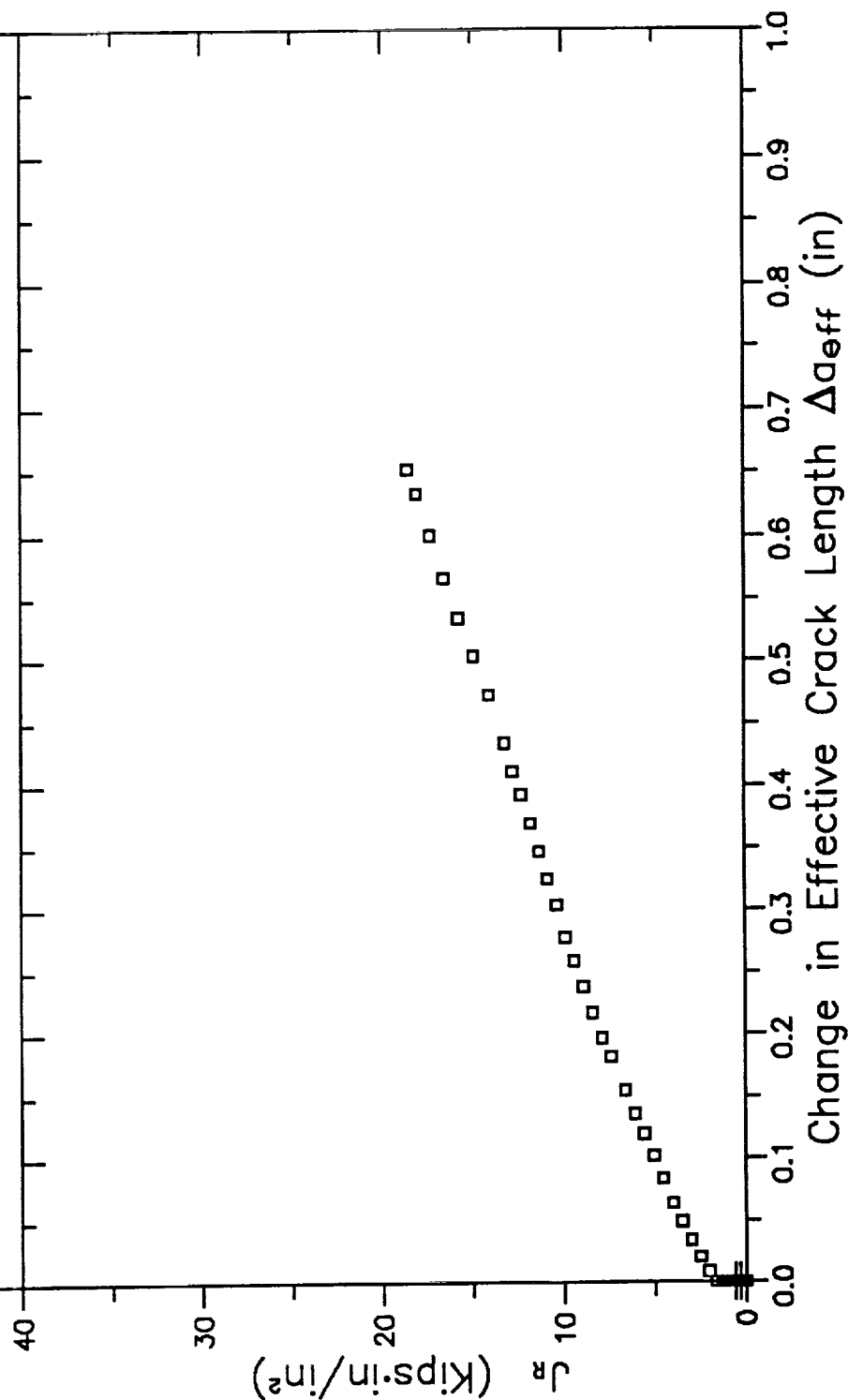
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)

Specimen Orientation: L-T

Specimen Thickness: 0.984 in.

Specimen Width: 1.969 in.



B3-580

# RESISTANCE CURVE

SA516 GRADE 70

Condition/Ht: -0-

Form: Plate (1 in. thick)

Kc: NA

Reference: REG03

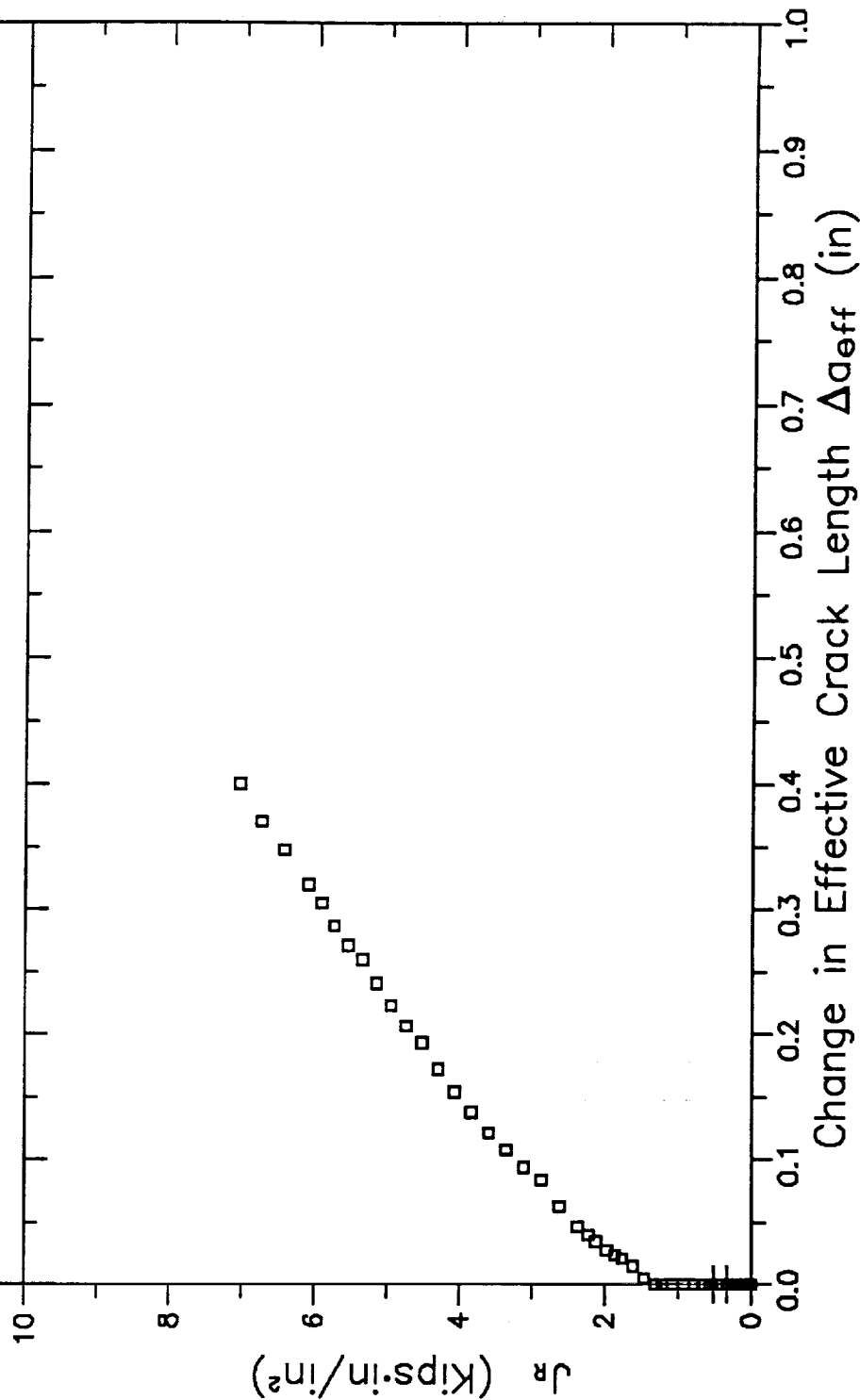
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)

Specimen Orientation: L-T

Specimen Thickness: 0.984 in.

Specimen Width: 1.969 in.

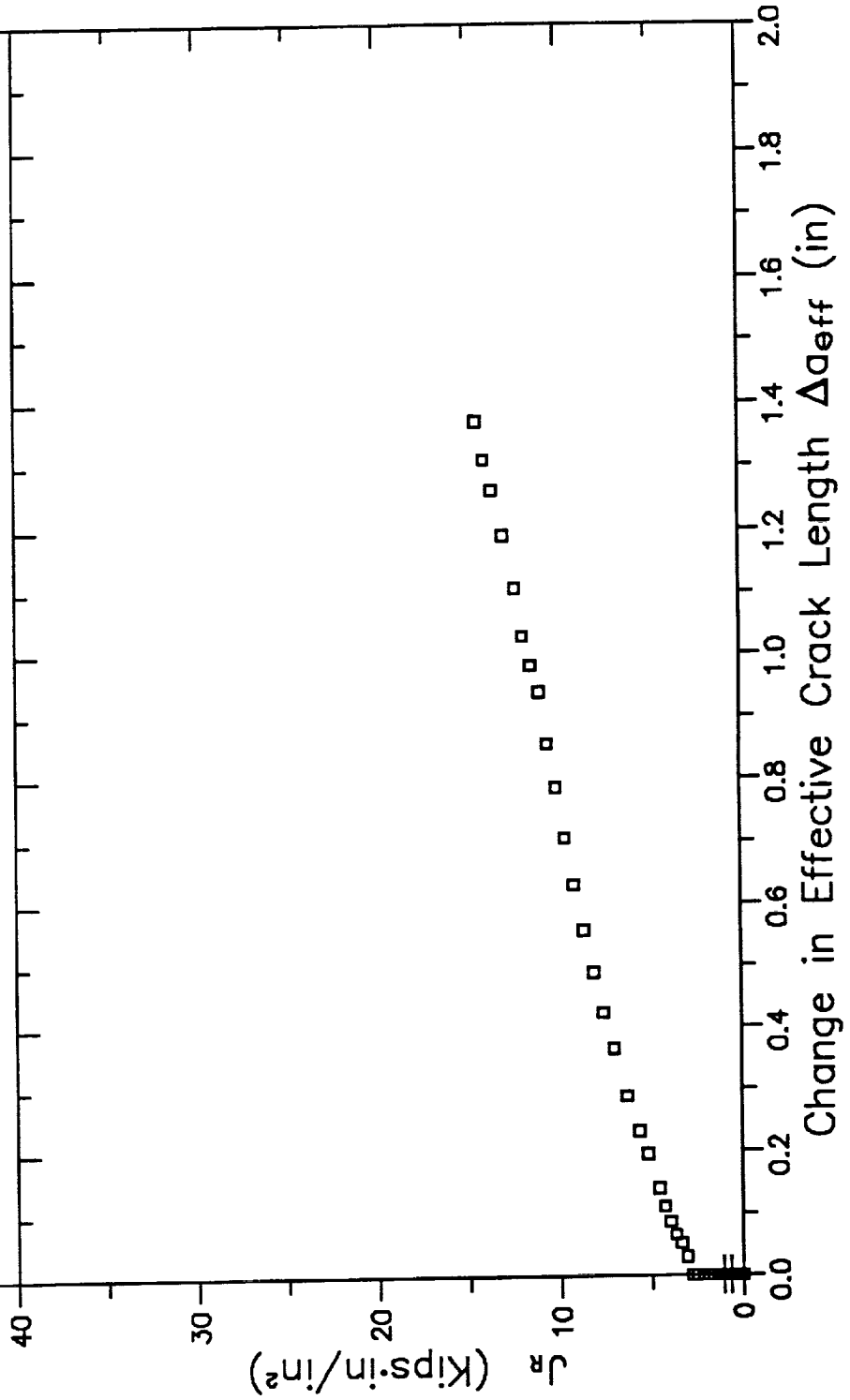


# RESISTANCE CURVE

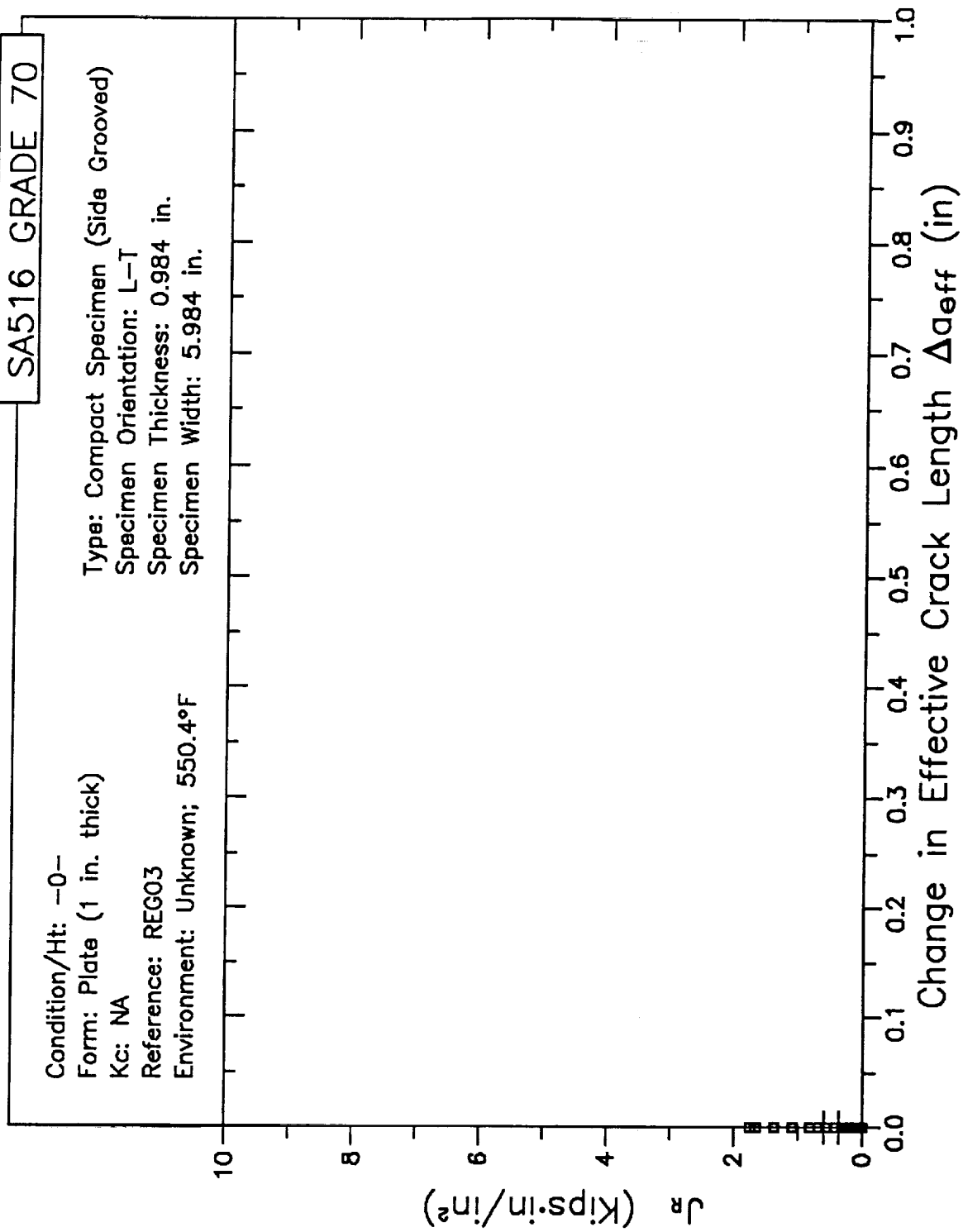
SA516 GRADE 70

Condition/Ht: -0-  
Form: Plate (1 in. thick)  
Kc: NA  
Reference: REG03  
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-T  
Specimen Thickness: 0.984 in.  
Specimen Width: 5.984 in.



# RESISTANCE CURVE

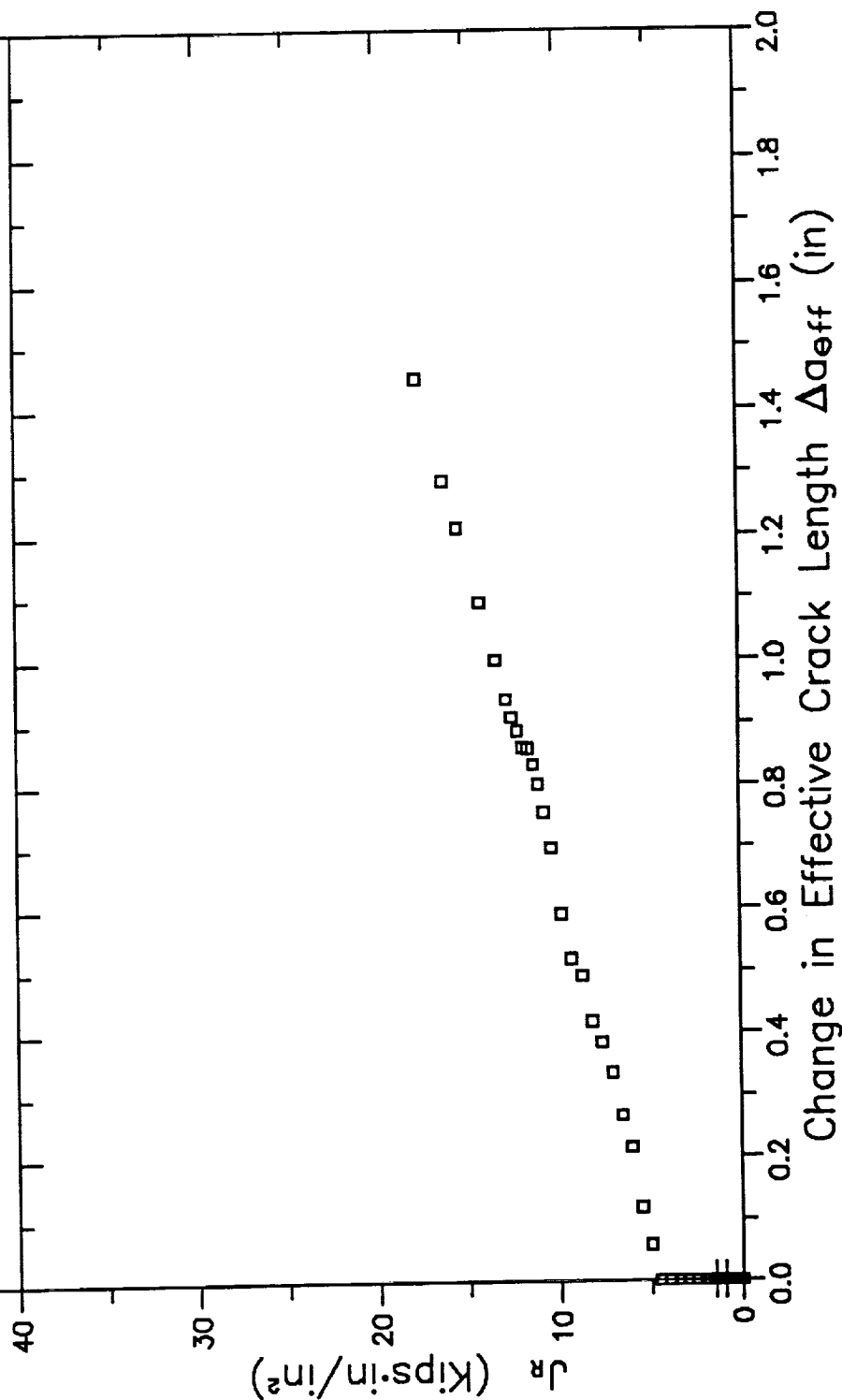


# RESISTANCE CURVE

SA516 GRADE 70

Condition/Ht: -0-  
Form: Plate (1 in. thick)  
Kc: NA  
Reference: REG03  
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-T  
Specimen Thickness: 0.984 in.  
Specimen Width: 20 in.



B3-584

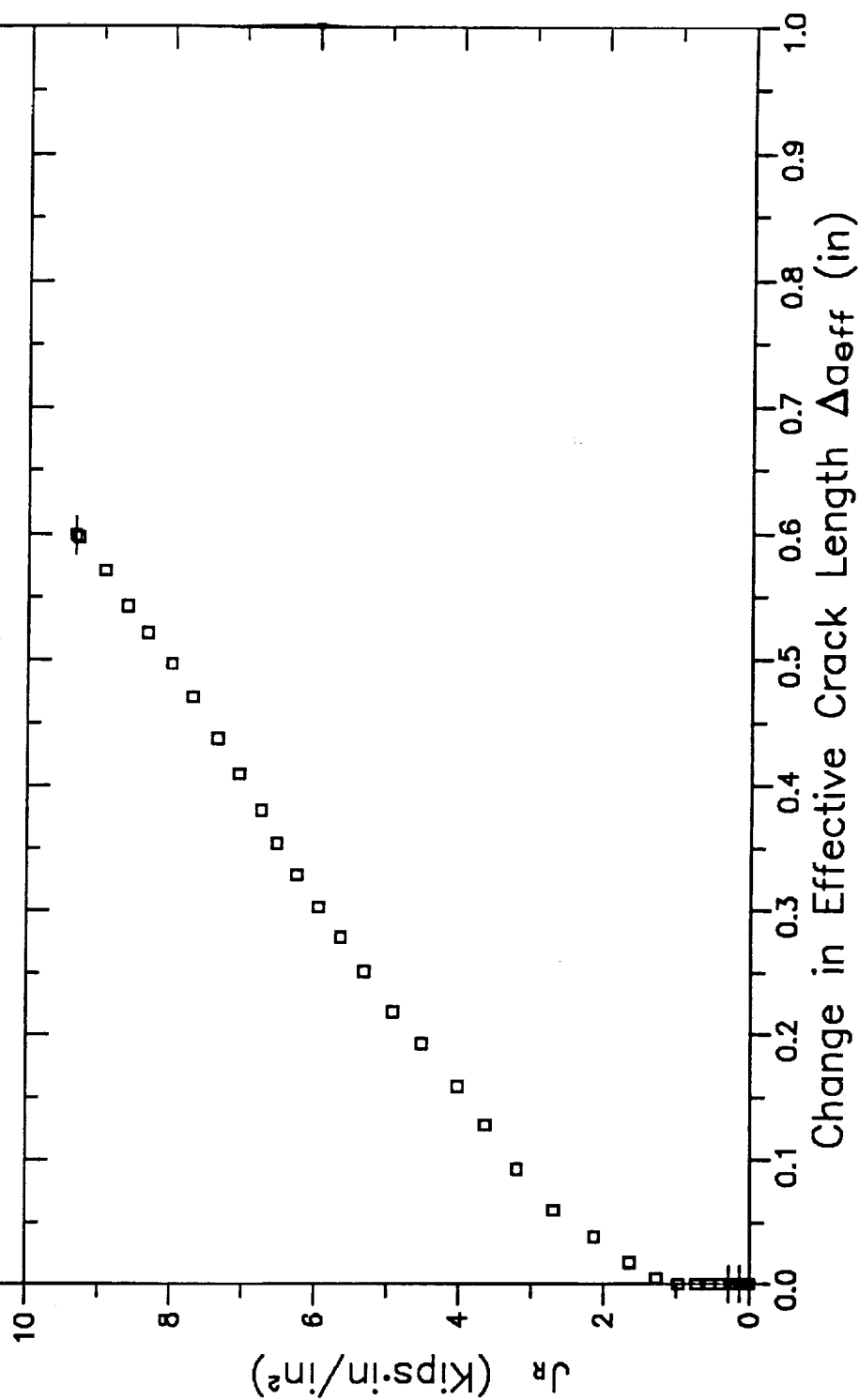


# RESISTANCE CURVE

SA516 GRADE 70

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG03  
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 0.984 in.  
Specimen Width: 1.969 in.

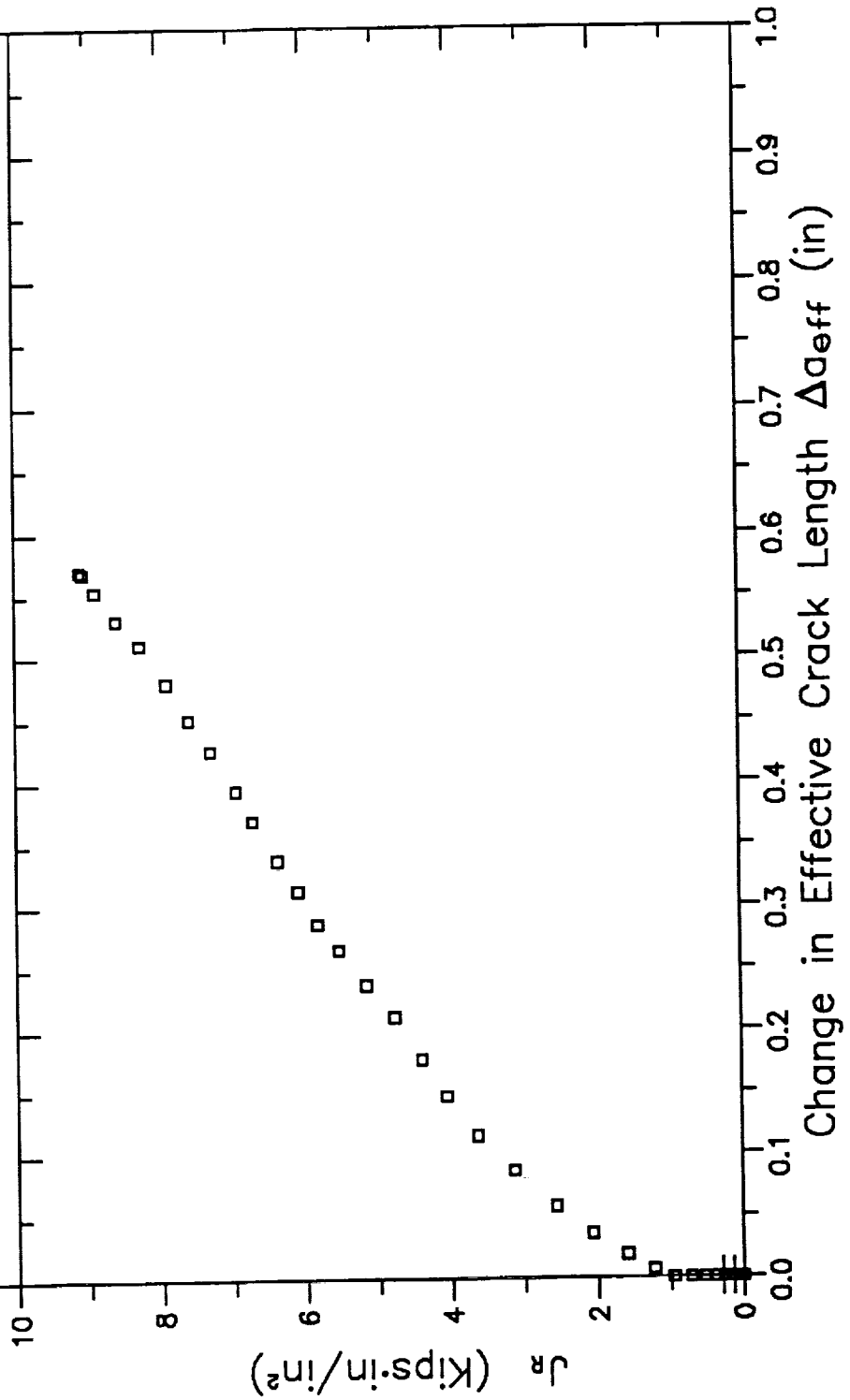


# RESISTANCE CURVE

SA516 GRADE 70

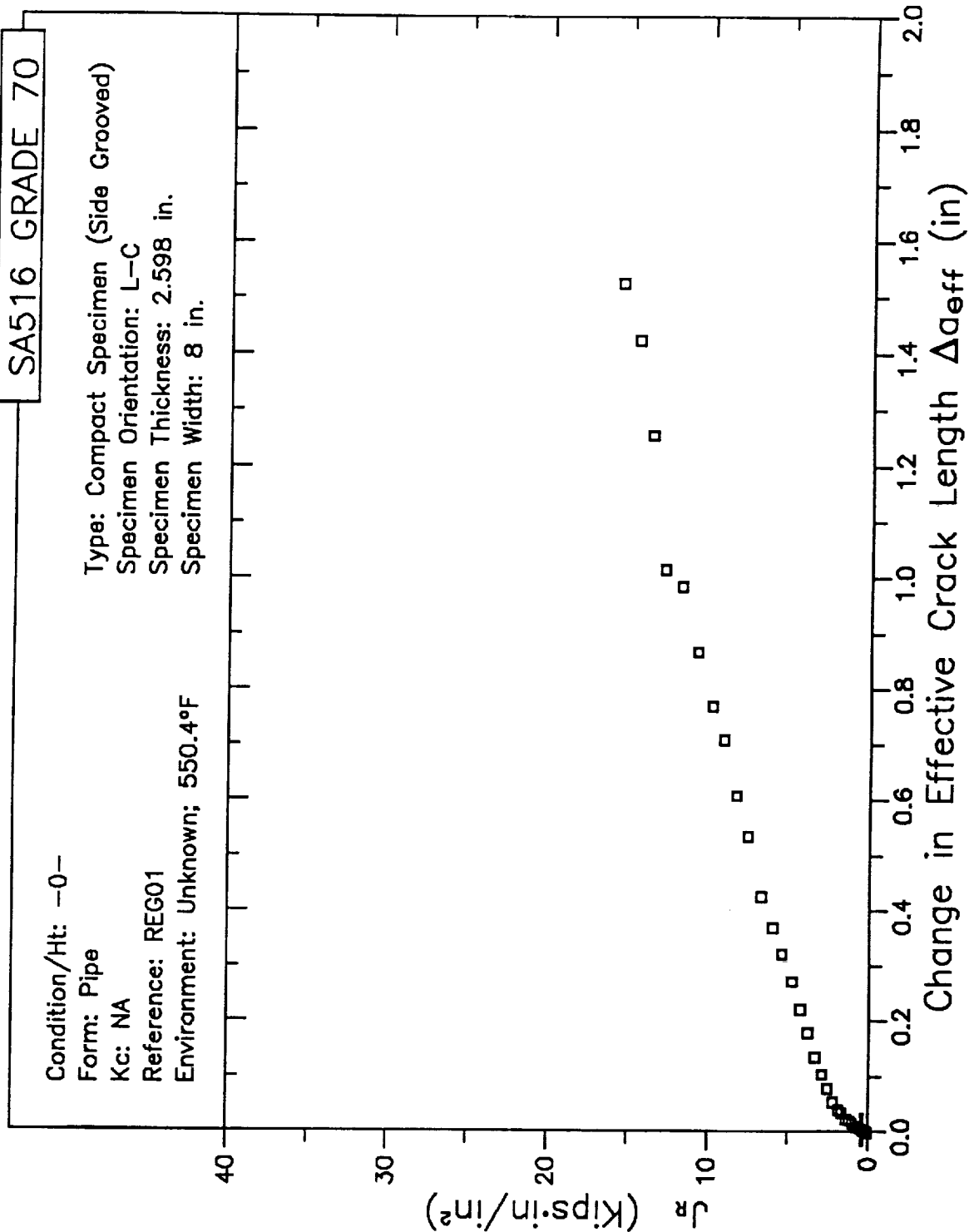
Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG03  
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 0.984 in.  
Specimen Width: 1.969 in.



B3-586

# RESISTANCE CURVE

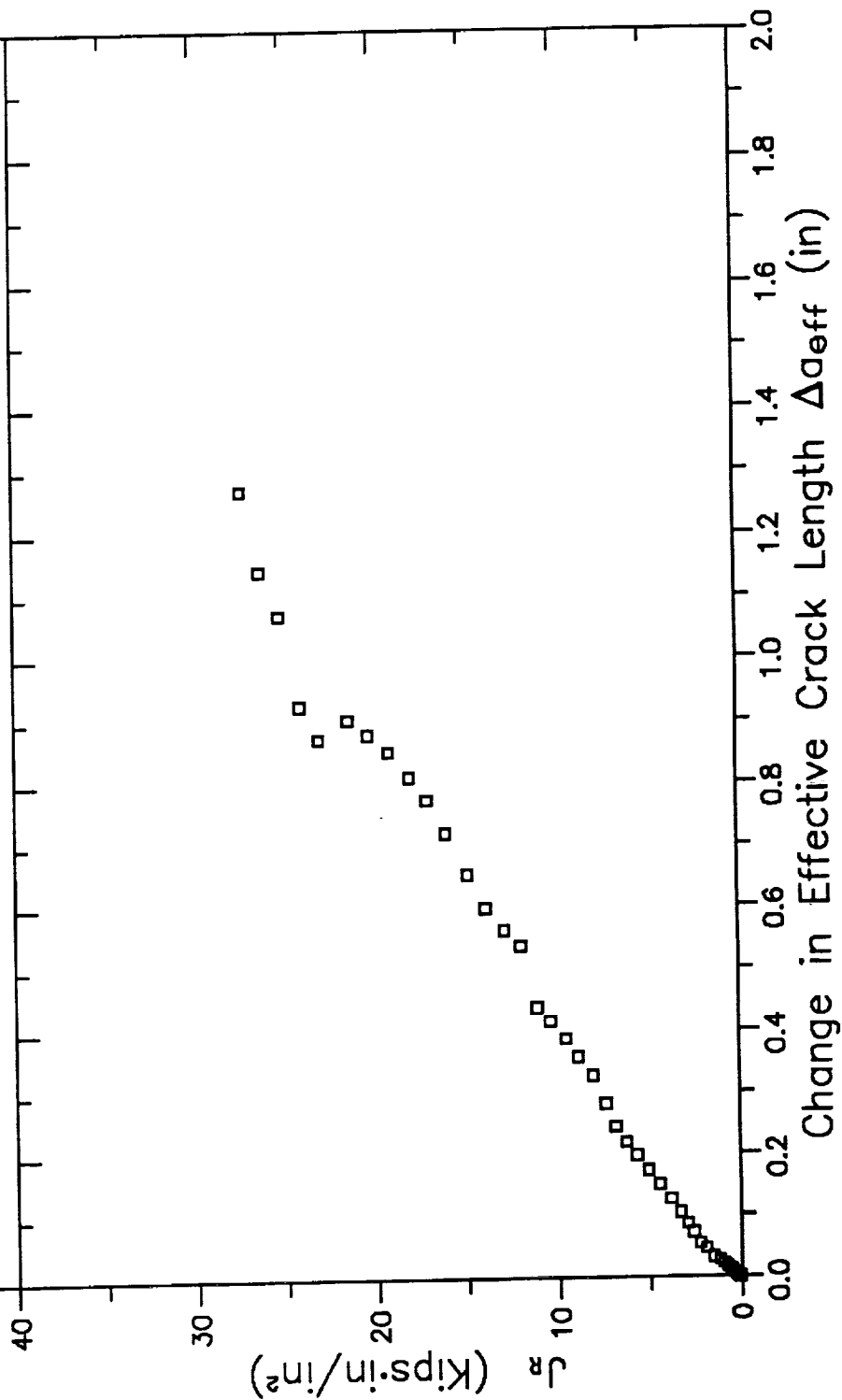


# RESISTANCE CURVE

SA516 GRADE 70

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG01  
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 2.598 in.  
Specimen Width: 8 in.



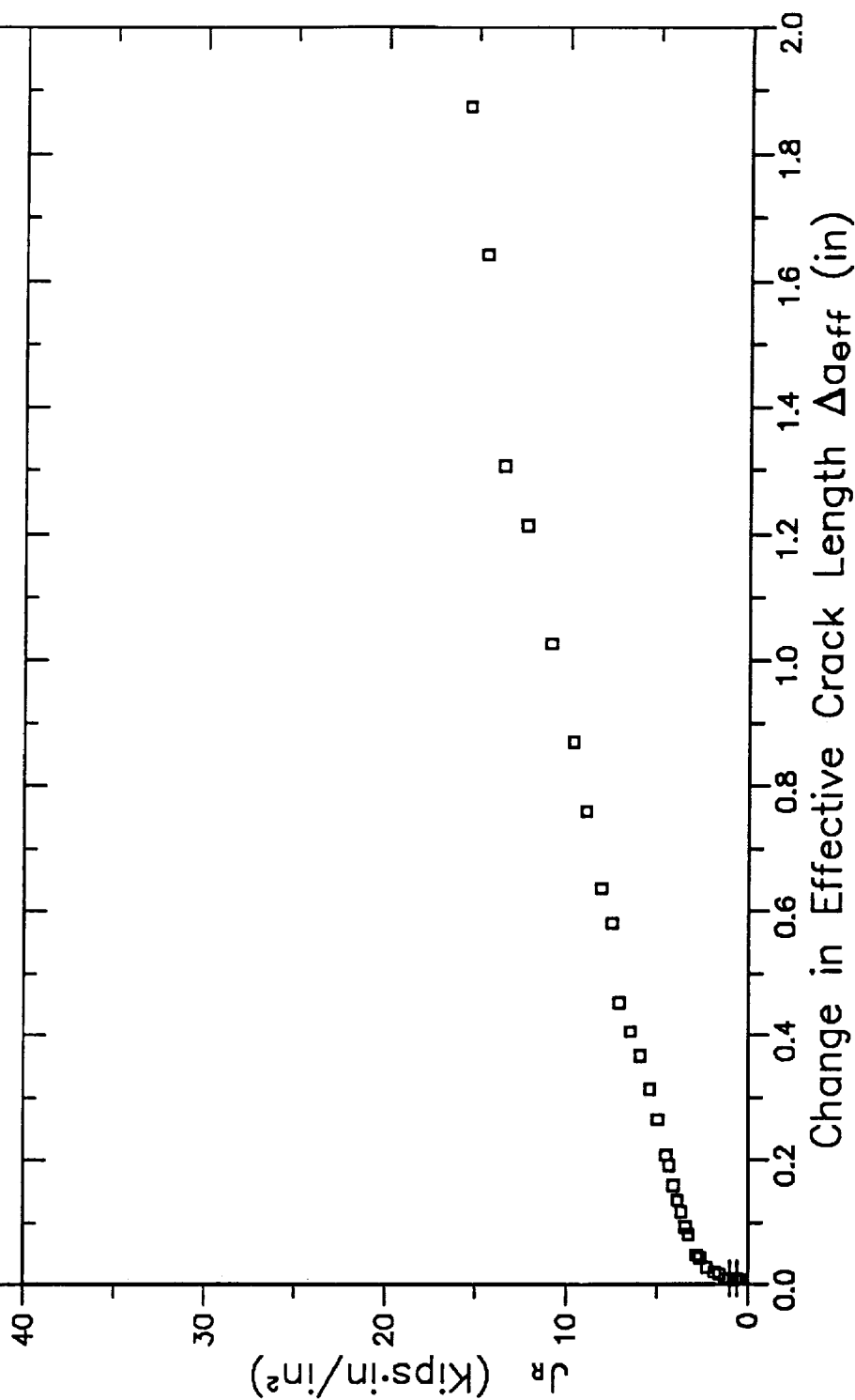
B3-588

# RESISTANCE CURVE

SA516 GRADE 70

Condition/Ht: -0-  
Form: Pipe, Weld  
Kc: NA  
Reference: REG01  
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 2.598 in.  
Specimen Width: 8 in.

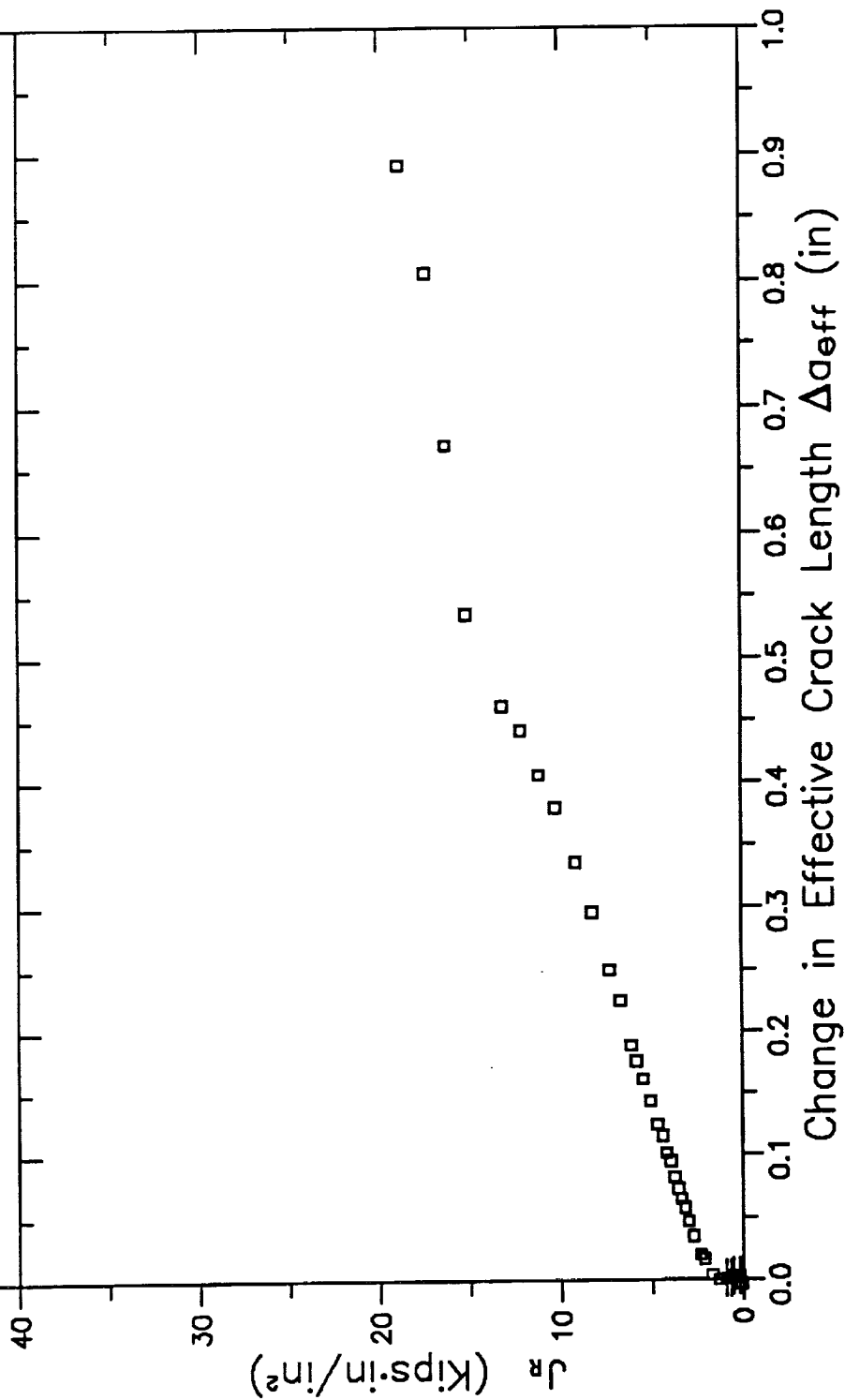


# RESISTANCE CURVE

SA516 GRADE 70

Condition/Ht: -0-  
Form: Pipe, Weld  
Kc: NA  
Reference: REG01  
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-C  
Specimen Thickness: 2.598 in.  
Specimen Width: 8 in.



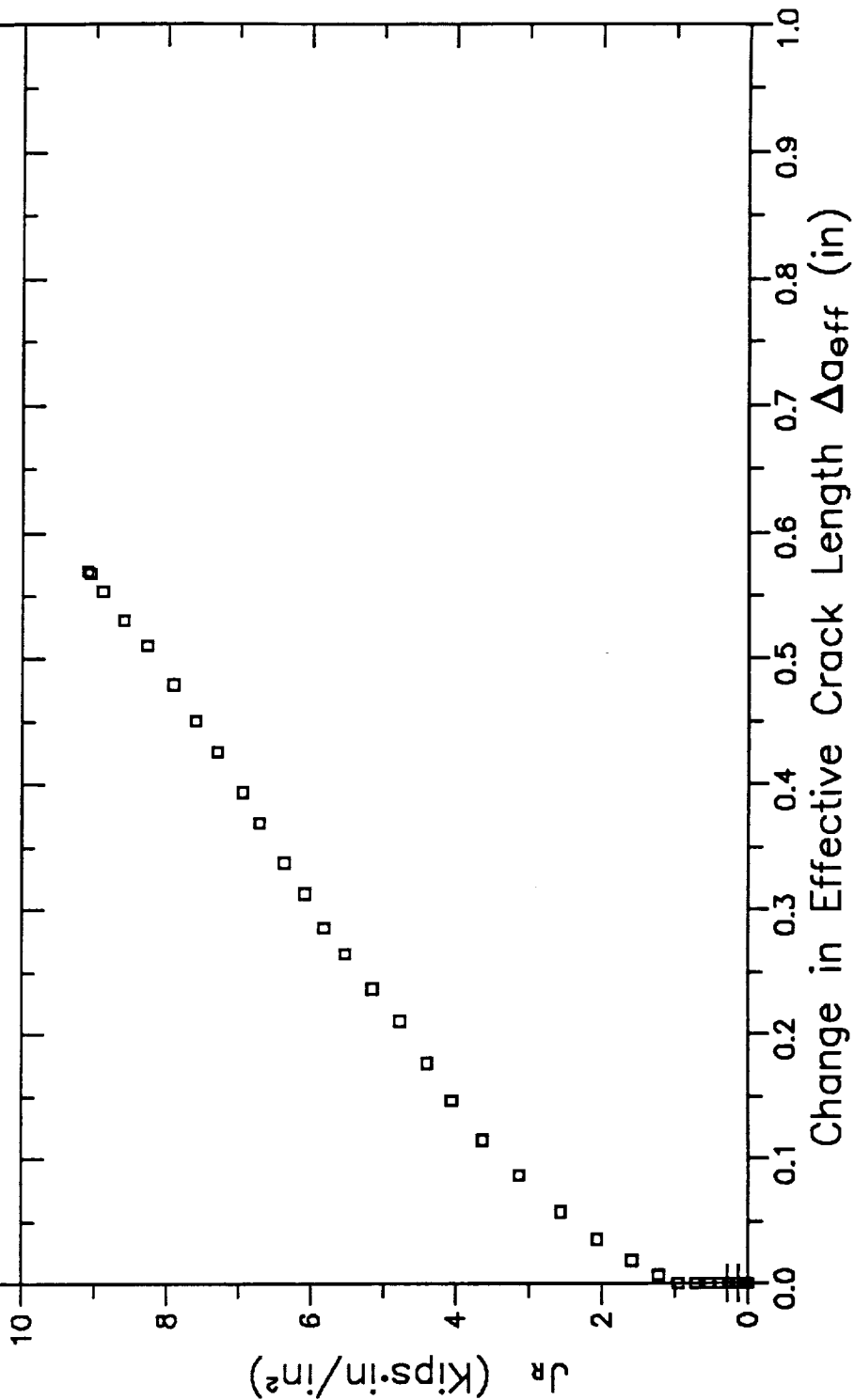
B3-590

# RESISTANCE CURVE

SA516 GRADE 70

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG03  
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-R  
Specimen Thickness: 0.984 in.  
Specimen Width: 1.969 in.



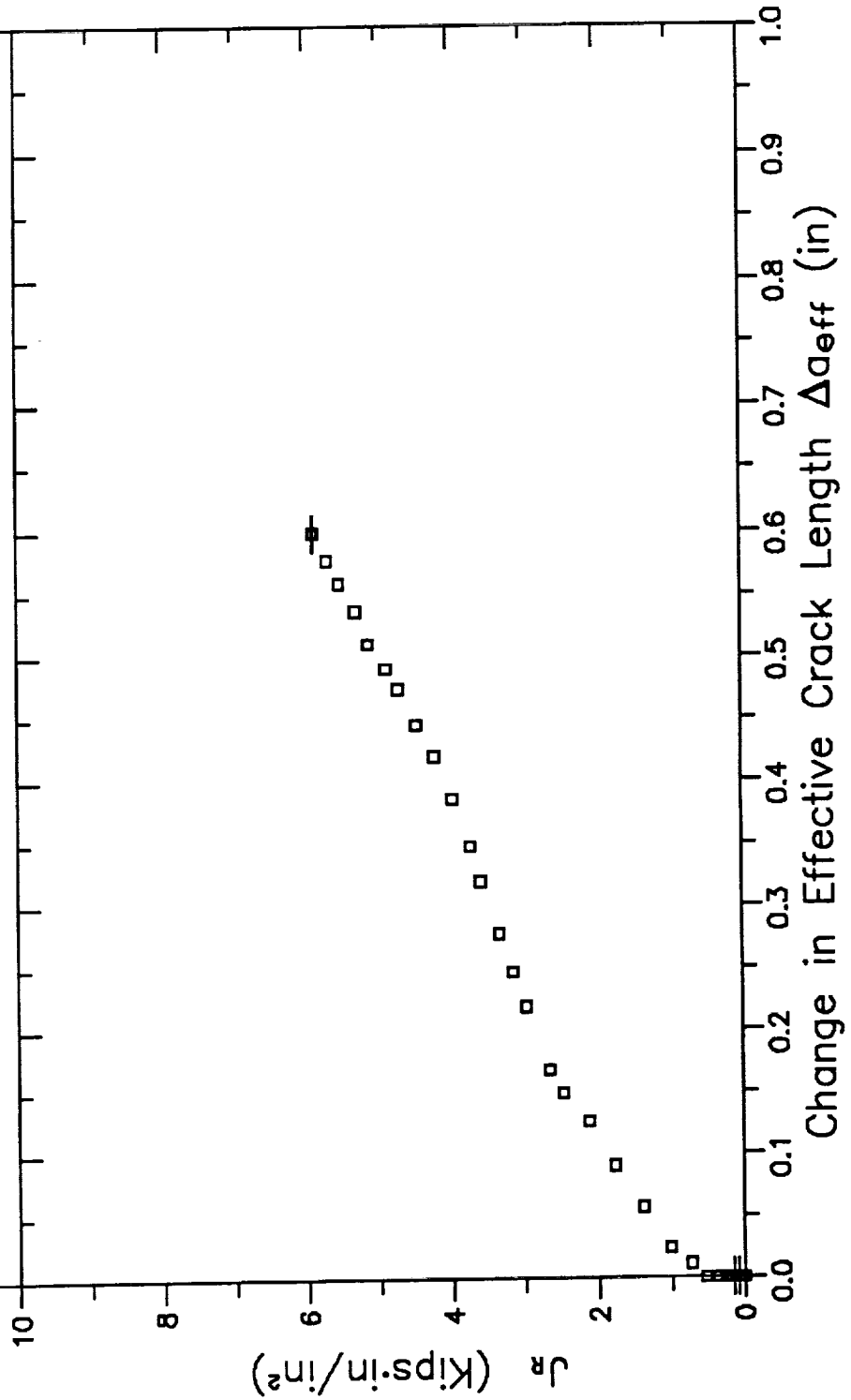
B3-591

# RESISTANCE CURVE

SA516 GRADE 70

Condition/Ht: -0-  
Form: Pipe  
Kc: NA  
Reference: REG03  
Environment: Unknown; 550.4°F

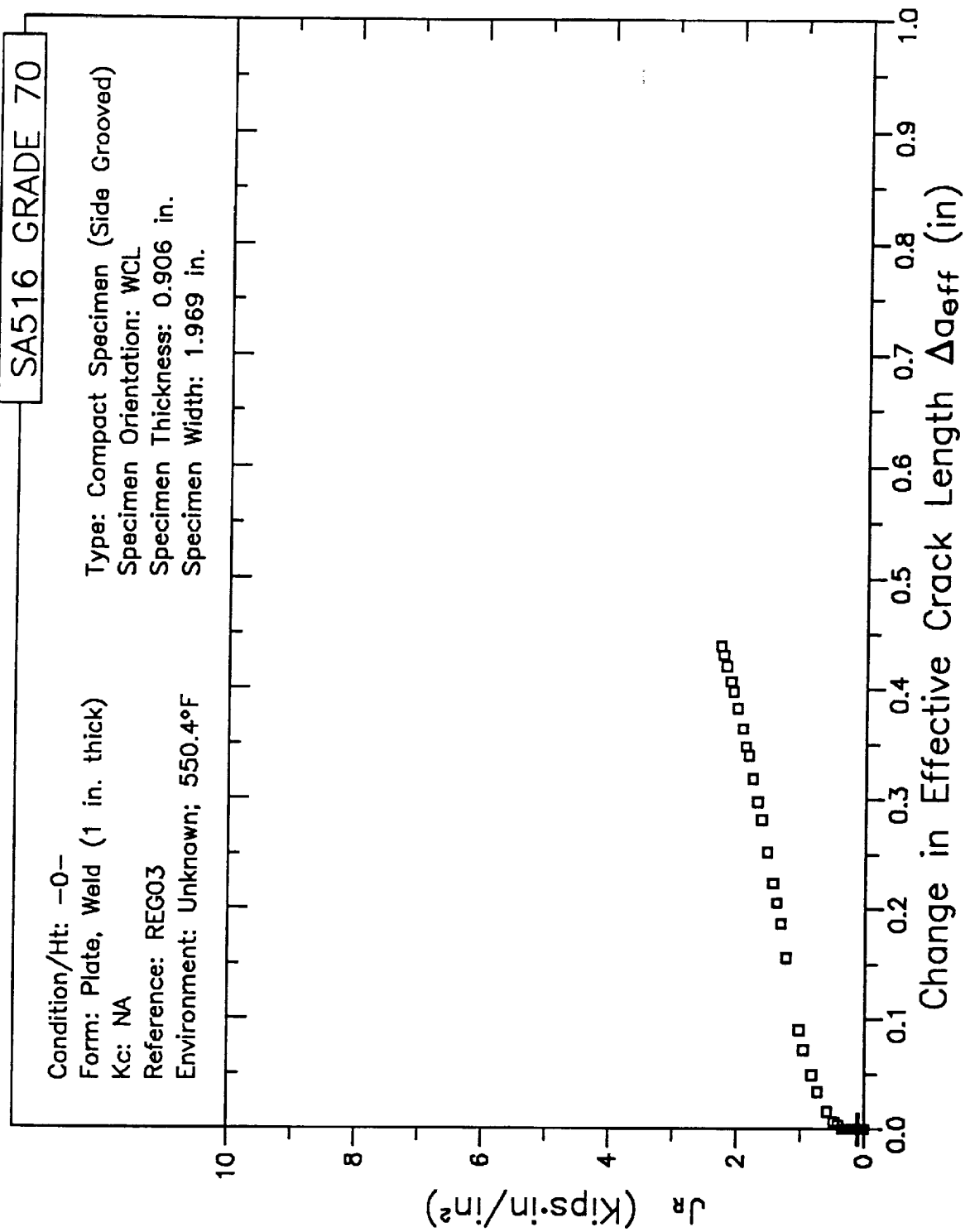
Type: Compact Specimen (Side Grooved)  
Specimen Orientation: L-R  
Specimen Thickness: 0.984 in.  
Specimen Width: 1.969 in.



B3-592



# RESISTANCE CURVE



# RESISTANCE CURVE

SA516 GRADE 70

Condition/Ht: -0-

Form: Plate, Weld (1 in. thick)

Kc: NA

Reference: REG03

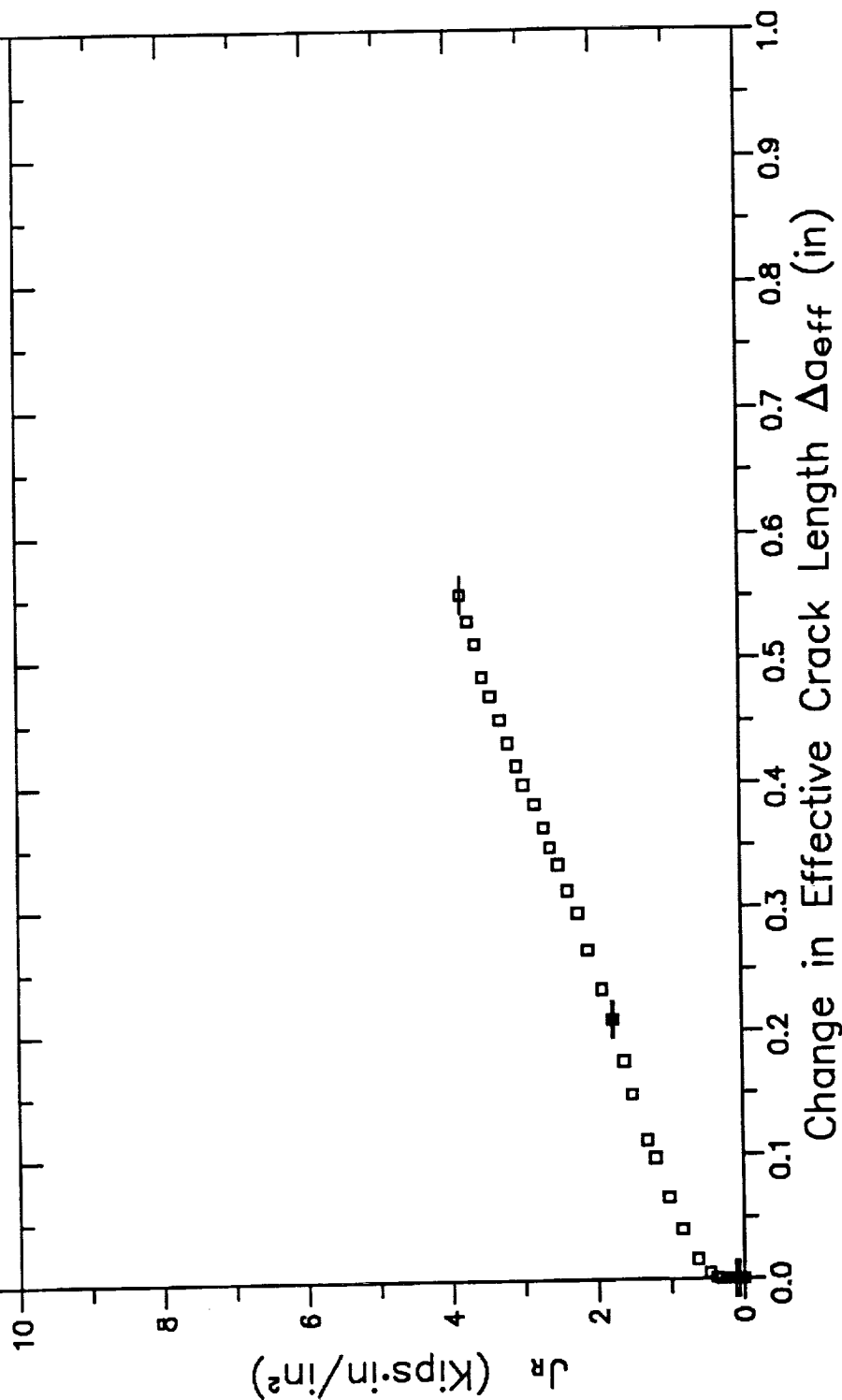
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)

Specimen Orientation: WCL

Specimen Thickness: 0.906 in.

Specimen Width: 1.969 in.



B3-594

# RESISTANCE CURVE

SA516 GRADE 70

Condition/Ht: -0-

Form: Plate, Weld (1 in. thick)

Kc: NA

Reference: REG03

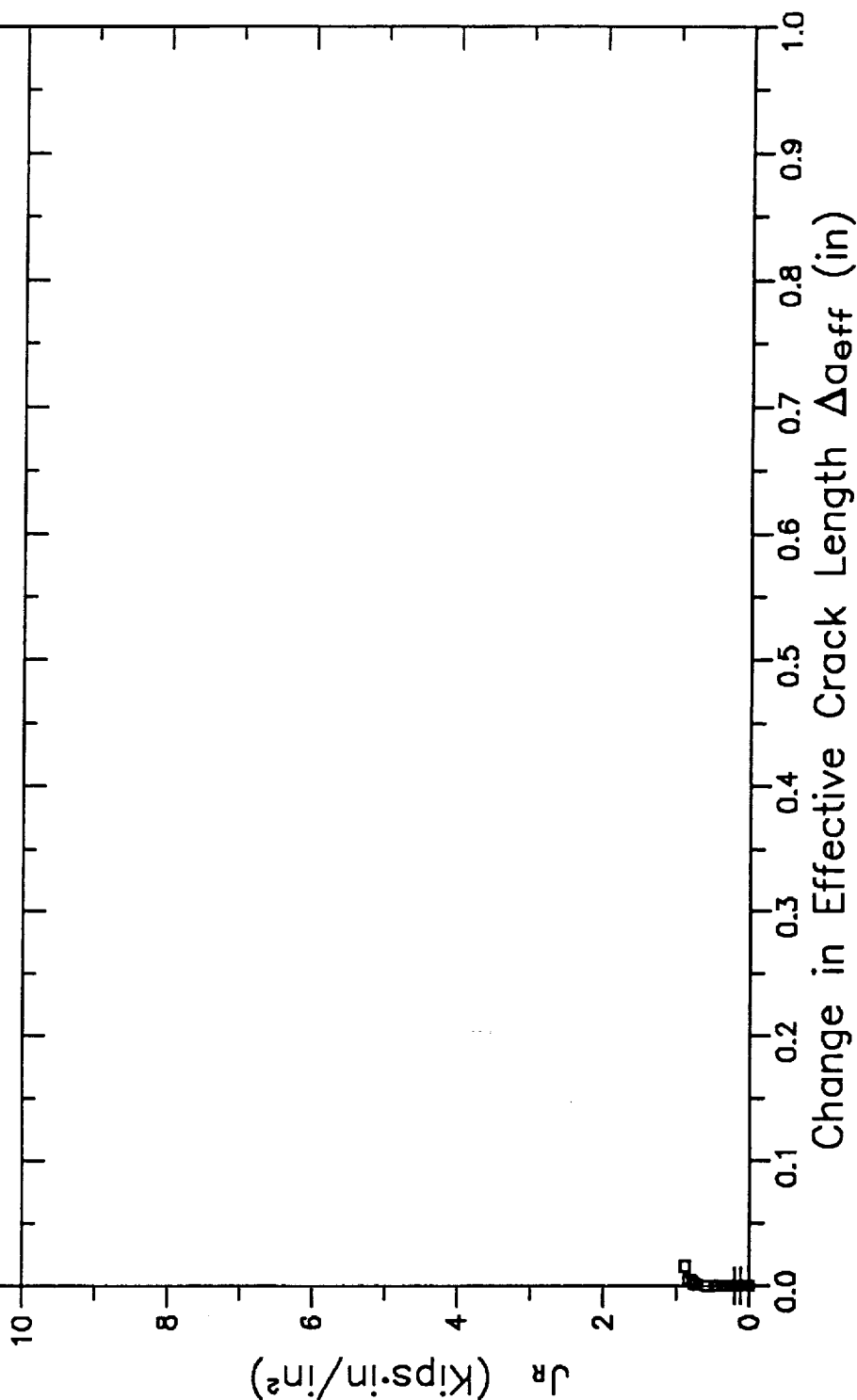
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)

Specimen Orientation: WCL

Specimen Thickness: 0.945 in.

Specimen Width: 1.969 in.



# RESISTANCE CURVE

SA516 GRADE 70

Condition/Ht: -0-

Form: Plate, Weld (1 in. thick)

Kc: NA

Reference: REG03

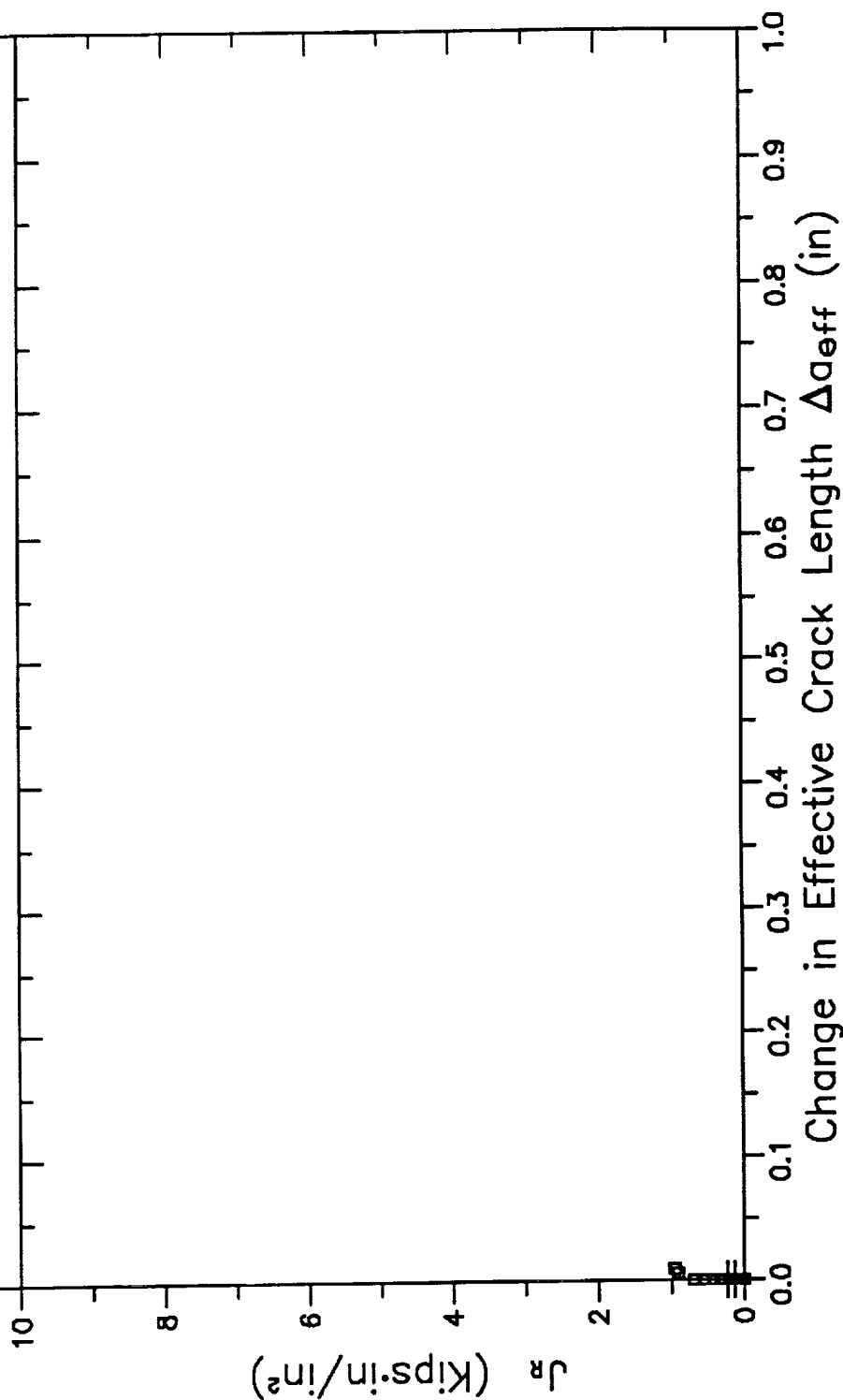
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)

Specimen Orientation: WCL

Specimen Thickness: 0.984 in.

Specimen Width: 1.969 in.



B3-596

# RESISTANCE CURVE

SA516 GRADE 70

Condition/Ht: -0-

Form: Plate, Weld (1 in. thick)

Kc: NA

Reference: REG03

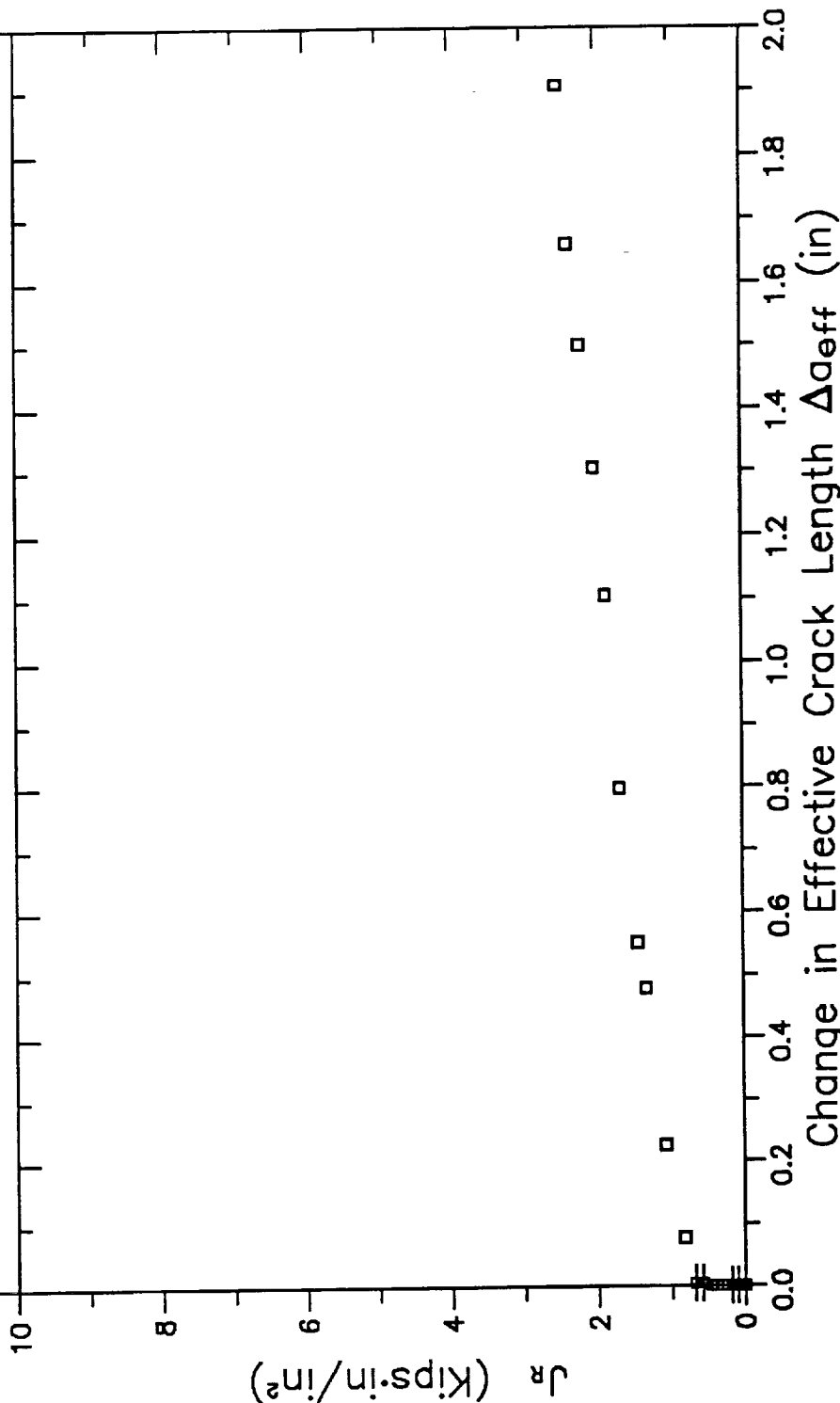
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)

Specimen Orientation: WCL

Specimen Thickness: 1.024 in.

Specimen Width: 19.016 in.



# RESISTANCE CURVE

SA516 GRADE 70

Condition/Ht: -0-

Form: Plate, Weld (1 in. thick)

Kc: NA

Reference: REG03

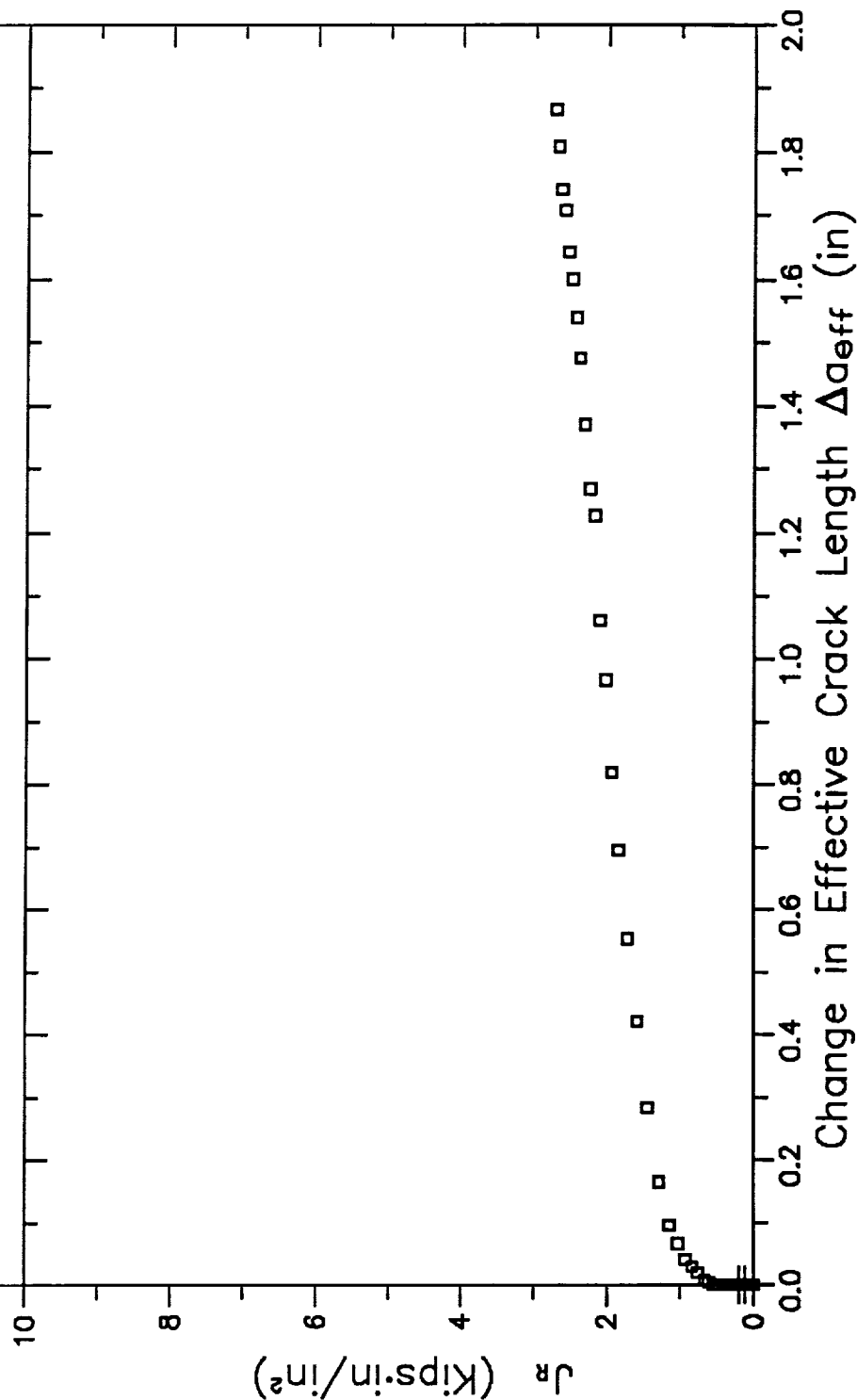
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)

Specimen Orientation: WCL

Specimen Thickness: 1.063 in.

Specimen Width: 5.984 in.



B3-598

**Appendix C**  
**Graphical Presentation of FCG Rate and R-Curve Data for Aluminum**

C1-0

*C-13.*

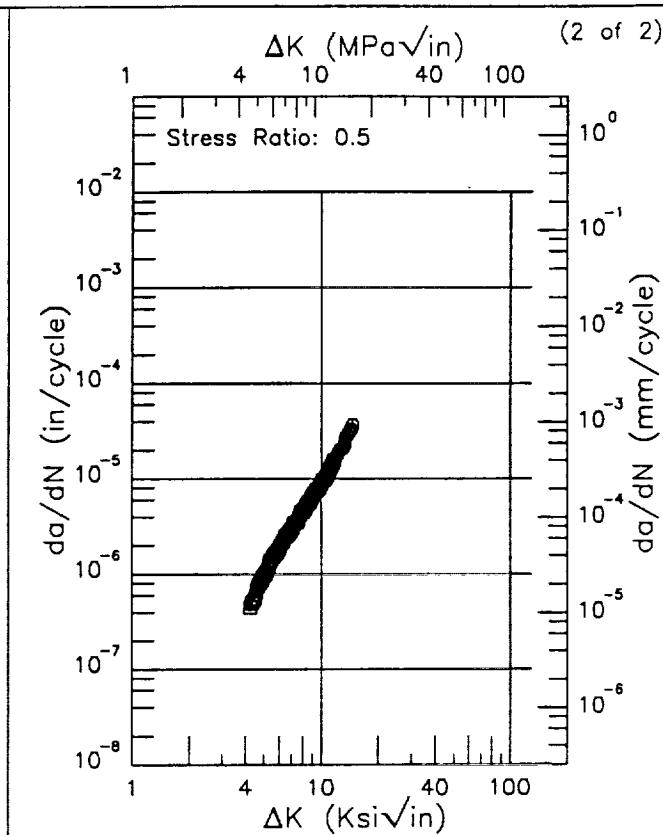
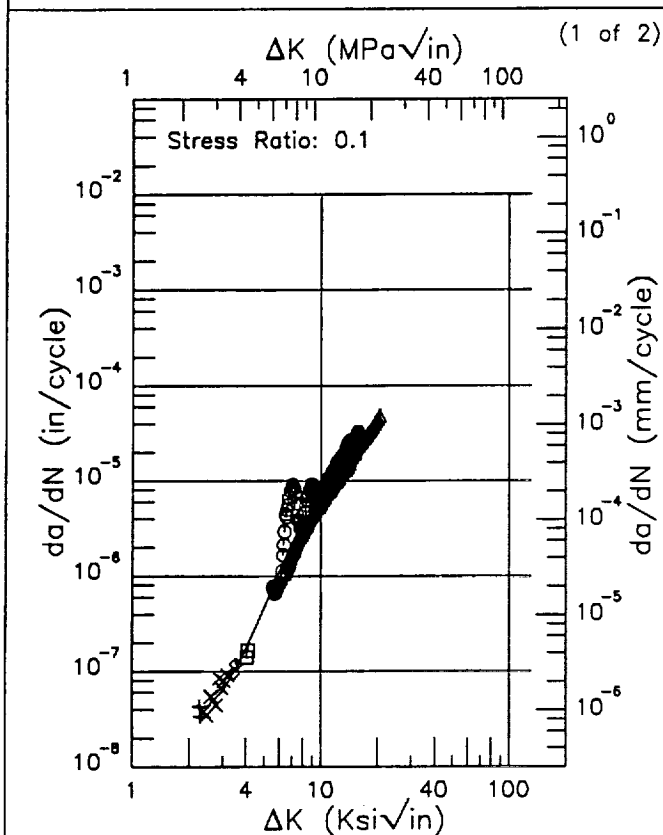




R 2124

Condition/Ht: T8151  
 Form: 6 in. Plate  
 Specimen Type: CT  
 Orientation: L-T  
 Frequency: 2 Hz  
 Environment: HHA; RT

Yield Strength: 54 ksi  
 Ult. Strength:  
 Specimen Thk: 0.495 - 0.499 in.  
 Specimen Width: 4.982 - 5 in.  
 Ref: F22



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
2.26 (min)	0.0403
2.5	0.0435
3.	0.0625
3.5	0.102
4.	0.172
5.	0.469
6.	1.11
7.	2.23
8.	3.87
9.	5.90
10.	8.19
13.	16.3
16.	26.7
20.	43.6
20.23 (max)	44.5

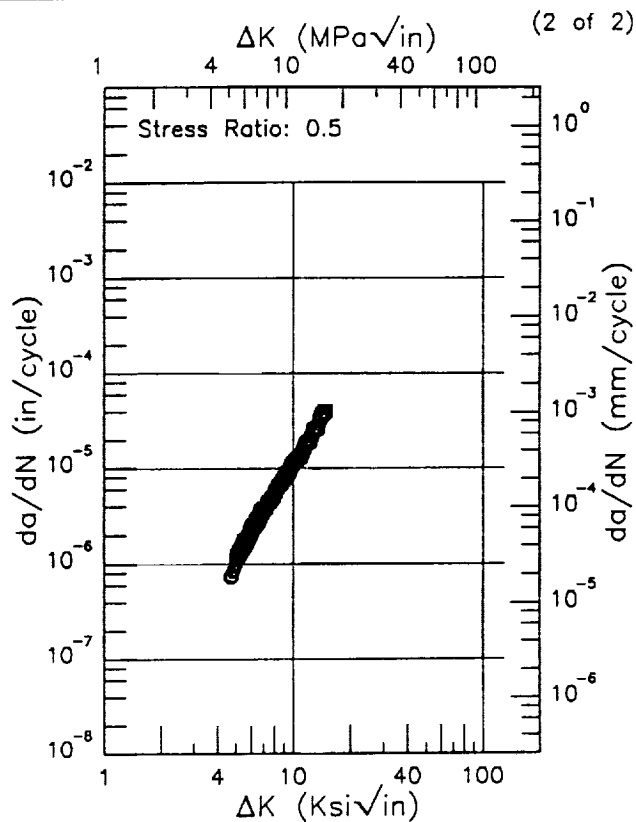
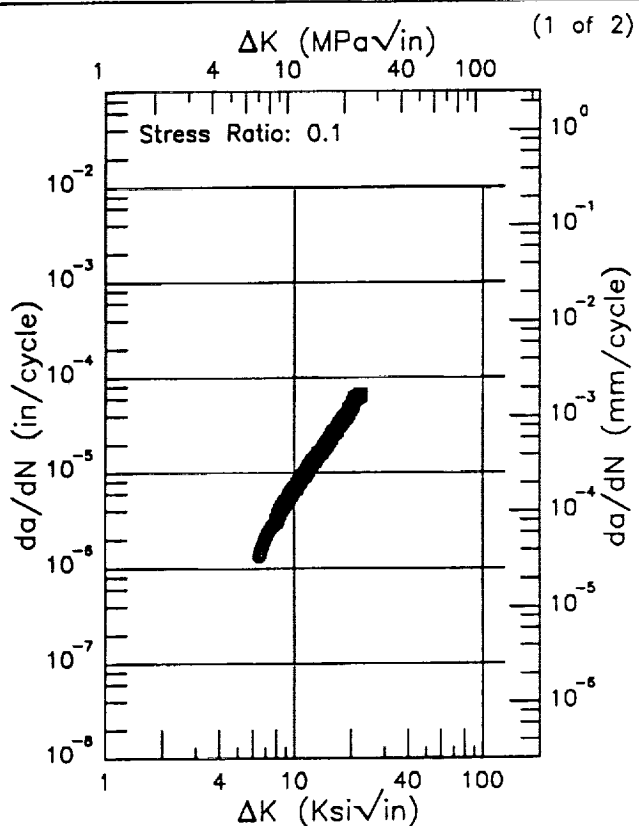
$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
4.22 (min)	0.445
5.	0.980
6.	1.92
7.	3.12
8.	4.65
9.	6.60
10.	9.14
13.	22.3
14.57 (max)	36.1

RMS % Error	Life Prediction Ratio Summary
53.12	

RMS % Error	Life Prediction Ratio Summary
3.45	

Condition/Ht: T8151  
 Form: 6 in. Plate  
 Specimen Type: CT  
 Orientation: L-T  
 Frequency: 2 Hz  
 Environment: JP4; RT

Yield Strength: 54 ksi  
 Ult. Strength:  
 Specimen Thk: 0.495 in.  
 Specimen Width: 4.993 - 5.002 in.  
 Ref: F22

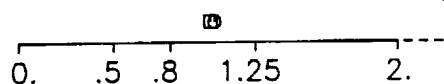


ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
6.49 (min)	1.45
7.	1.99
8.	3.29
9.	4.89
10.	6.77
13.	14.4
16.	25.2
20.	49.3
22.22 (max)	67.7

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
4.65 (min)	0.707
5.	1.02
6.	2.14
7.	3.55
8.	5.46
9.	7.96
10.	10.9
13.	25.2
14.73 (max)	40.4

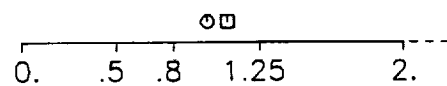
RMS %  
 Error  
 2.84

Life Prediction Ratio Summary



RMS %  
 Error  
 5.92

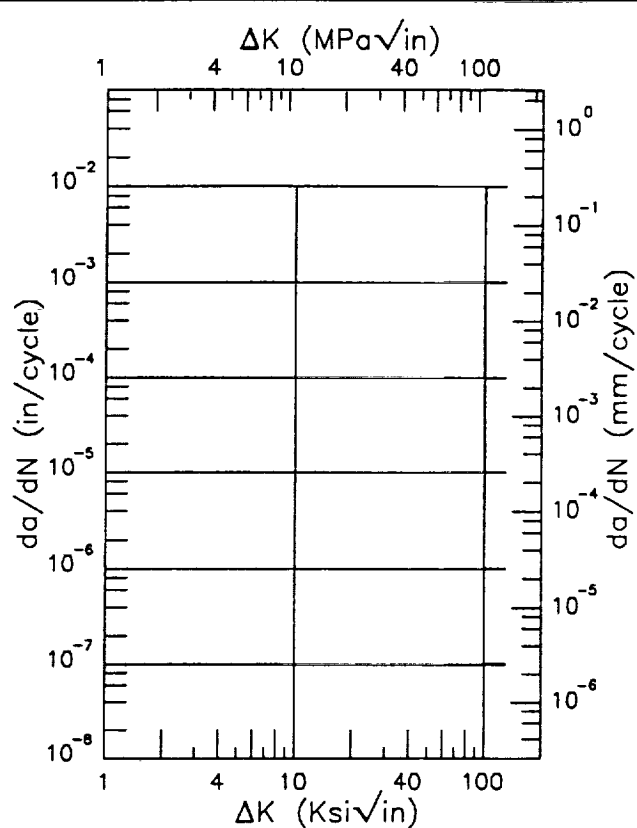
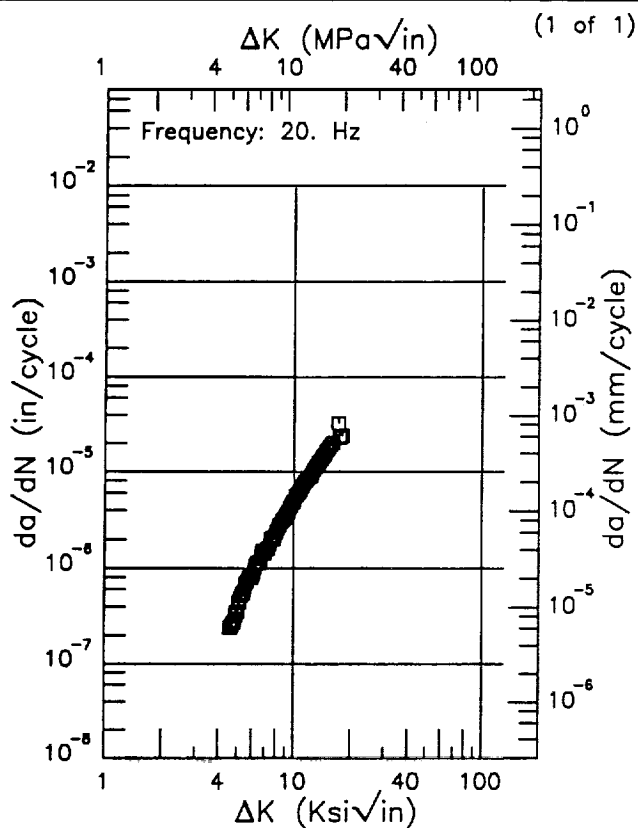
Life Prediction Ratio Summary



F 2124

Condition/Ht: T8151  
 Form: 6 in. Plate  
 Specimen Type: CT  
 Orientation: L-T  
 Stress Ratio: 0.1  
 Environment: 220F; RT

Yield Strength: 54 ksi  
 Ult. Strength:  
 Specimen Thk: 0.494 in.  
 Specimen Width: 5.001 in.  
 Ref: F22



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
4.56 (min)	0.205
5.	0.376
6.	0.880
7.	1.49
8.	2.29
9.	3.48
10.	5.07
13.	10.8
16.	21.7
17.86 (max)	26.7

$\Delta K$  (Ksi $\sqrt{\text{in}}$ )  $da/dN$  ( $10^{-6}$  in/cycle)

RMS %  
 Error  
 6.11

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

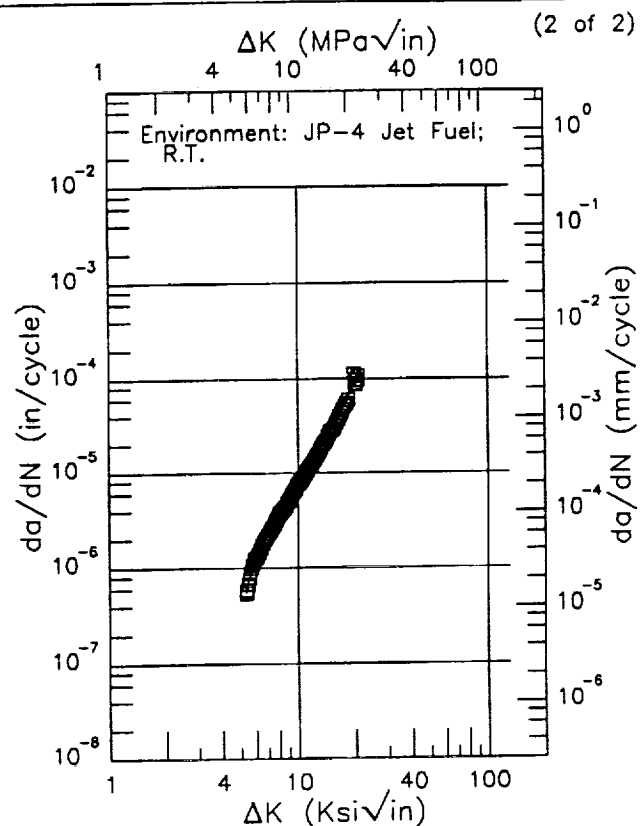
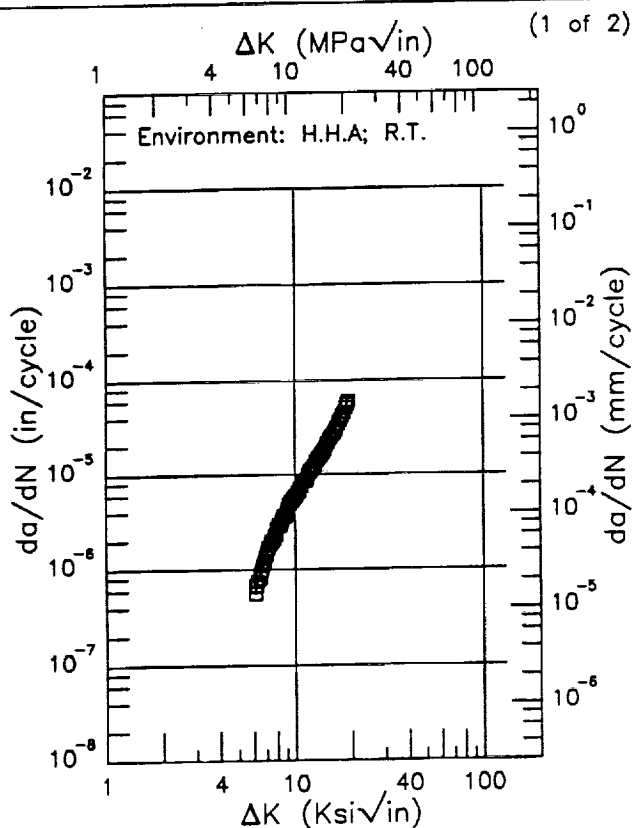
RMS %  
 Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

Condition/Ht: T8151  
 Form: 6 in. Plate  
 Specimen Type: CT  
 Orientation: T-L  
 Stress Ratio: 0.1  
 Frequency: 2 Hz

Yield Strength: 54 ksi  
 Ult. Strength:  
 Specimen Thk: 0.493 - 0.496 in.  
 Specimen Width: 4.994 - 5 in.  
 Ref: F22



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
6.08 (min)	0.605
7.	1.41
8.	2.64
9.	4.17
10.	5.98
13.	13.9
16.	28.4
19.13 (max)	60.4

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
5.32 (min)	0.623
6.	1.23
7.	2.35
8.	3.65
9.	5.23
10.	7.32
13.	17.4
16.	34.7
20.	98.2
20.66 (max)	117.

RMS %  
 Error  
 3.90

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

RMS %  
 Error  
 4.85

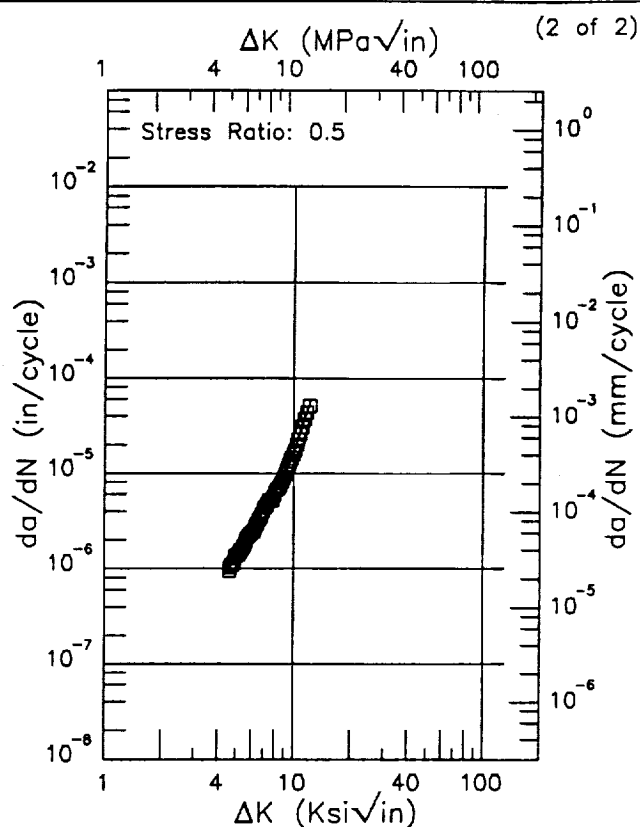
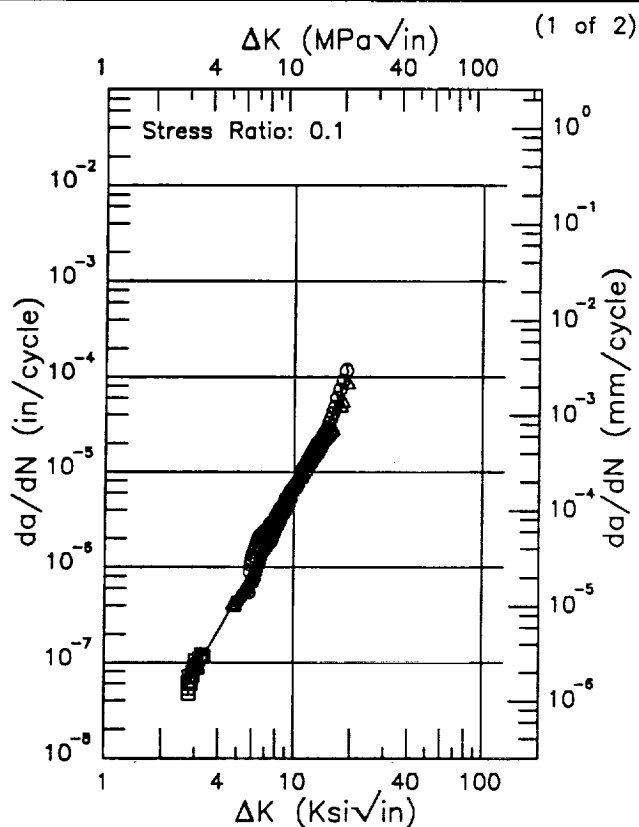
Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

R 2124

Condition/Ht: T8151  
 Form: 6 in. Plate  
 Specimen Type: CT  
 Orientation: S-L  
 Frequency: 2 Hz  
 Environment: HHA; RT

Yield Strength: 54 ksi  
 Ult. Strength:  
 Specimen Thk: 0.497 - 0.499 in.  
 Specimen Width: 2.99 - 3.002 in.  
 Ref: F22



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
2.75 (min)	0.0649
3.	0.0832
3.5	0.136
4.	0.216
5.	0.498
6.	1.02
7.	1.86
8.	3.10
9.	4.79
10.	6.99
13.	17.6
16.	38.7
19.21 (max)	118.

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
4.58 (min)	0.993
5.	1.30
6.	2.40
7.	4.07
8.	6.23
9.	9.67
10.	16.4
12.10 (max)	51.5

RMS %  
 Error  
 16.86

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

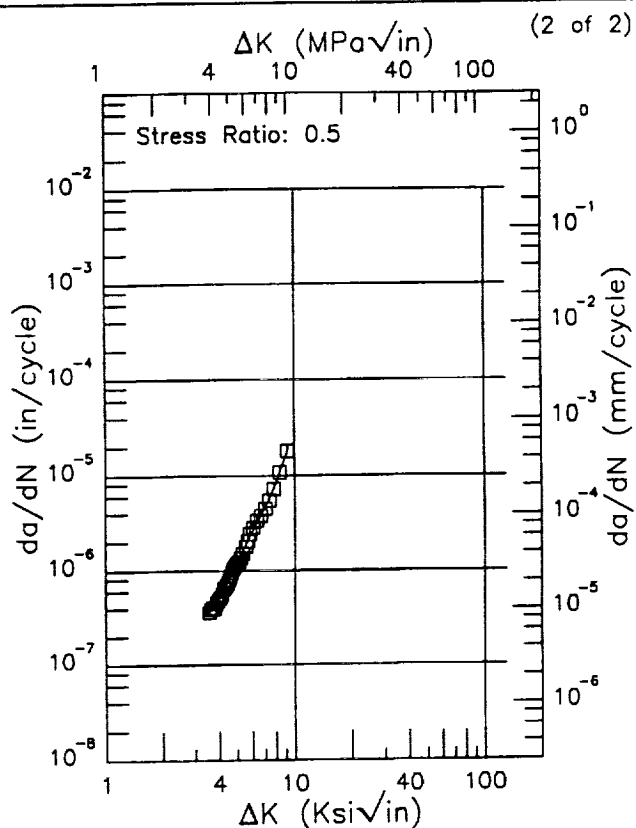
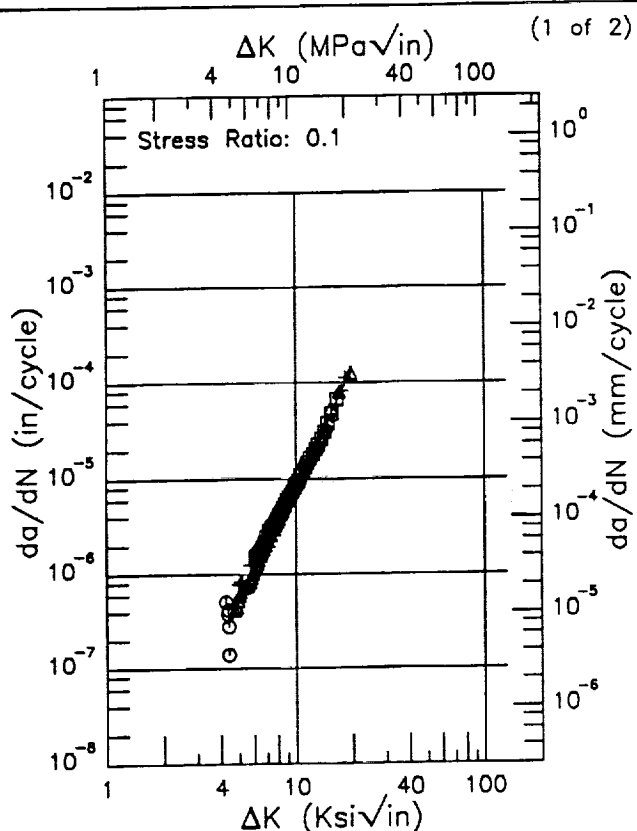
RMS %  
 Error  
 3.37

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

Condition/Ht: T8151  
 Form: 6 in. Plate  
 Specimen Type: CT  
 Orientation: S-L  
 Frequency: 2 Hz  
 Environment: JP4; RT

Yield Strength: 54 ksi  
 Ult. Strength:  
 Specimen Thk: 0.499 - 0.505 in.  
 Specimen Width: 3 - 3.003 in.  
 Ref: F22



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
4.24 (min)	0.307
5.	0.570
6.	1.21
7.	2.30
8.	3.90
9.	5.97
10.	8.55
13.	22.0
16.	57.5
19.59 (max)	126.

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
3.54 (min)	0.350
4.	0.511
5.	1.21
6.	2.65
7.	4.61
8.	8.34
9.	16.3
9.18 (max)	17.8

RMS %  
 Error  
 12.21

Life Prediction Ratio Summary  
 ○ □ +  
 0. .5 .8 1.25 2.

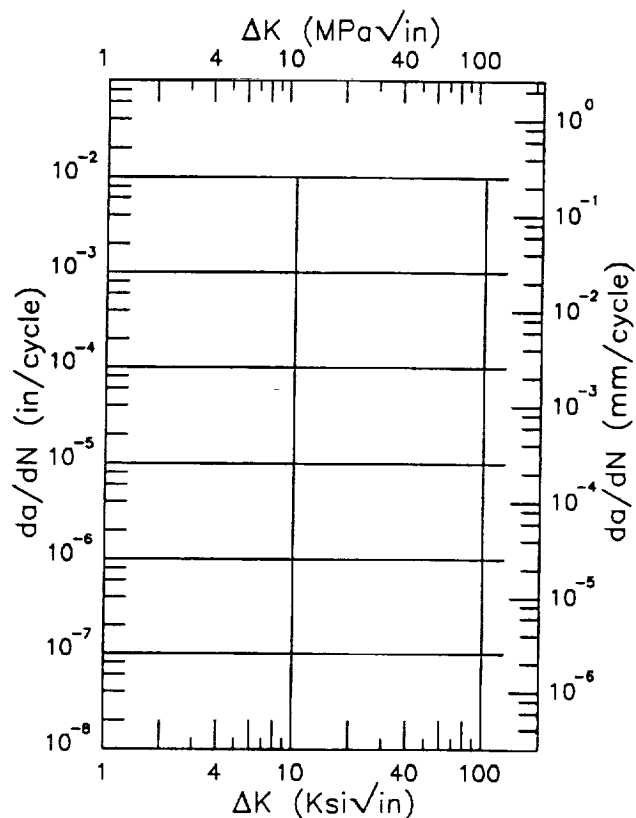
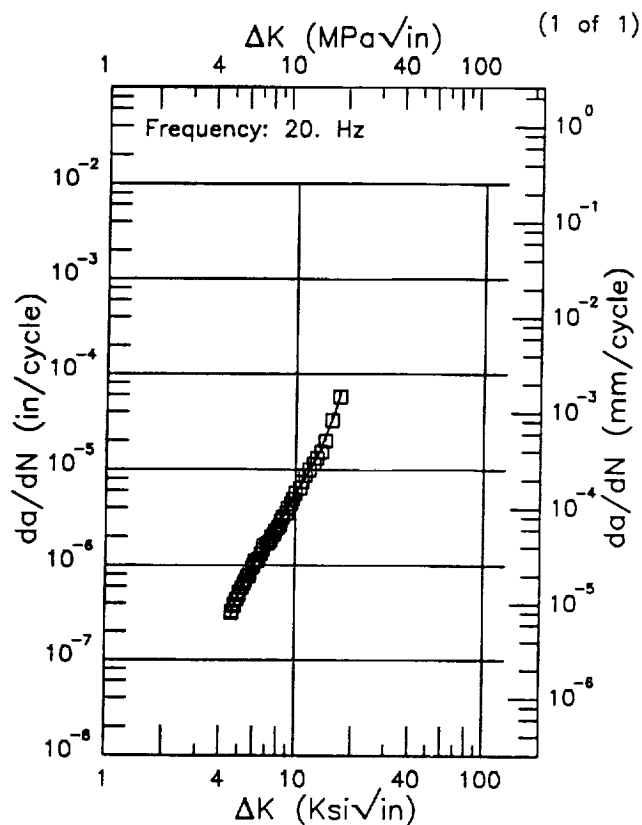
RMS %  
 Error  
 3.37

Life Prediction Ratio Summary  
 □  
 0. .5 .8 1.25 2.

F 2124

Condition/Ht: T8151  
 Form: 6 in. Plate  
 Specimen Type: CT  
 Orientation: S-L  
 Stress Ratio: 0.1  
 Environment: 220F; RT

Yield Strength: 54 ksi  
 Ult. Strength:  
 Specimen Thk: 0.501 in.  
 Specimen Width: 3.016 in.  
 Ref: F22



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
4.59 (min)	0.300
5.	0.480
6.	0.991
7.	1.59
8.	2.45
9.	3.82
10.	5.68
13.	13.4
16.	39.4
16.92 (max)	57.4

ΔK (Ksi√in) da/dN (10<sup>-6</sup>in/cycle)

RMS %  
 Error  
 3.79

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

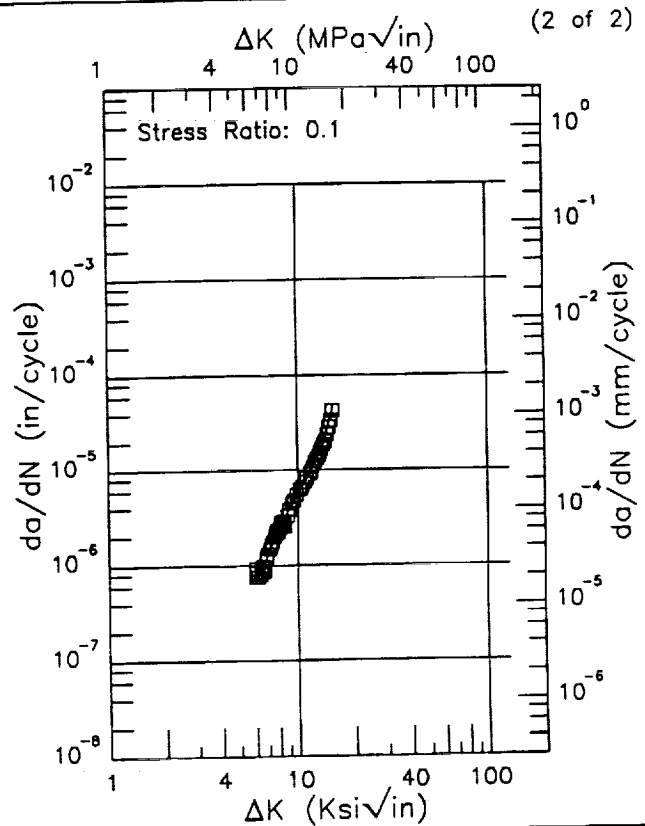
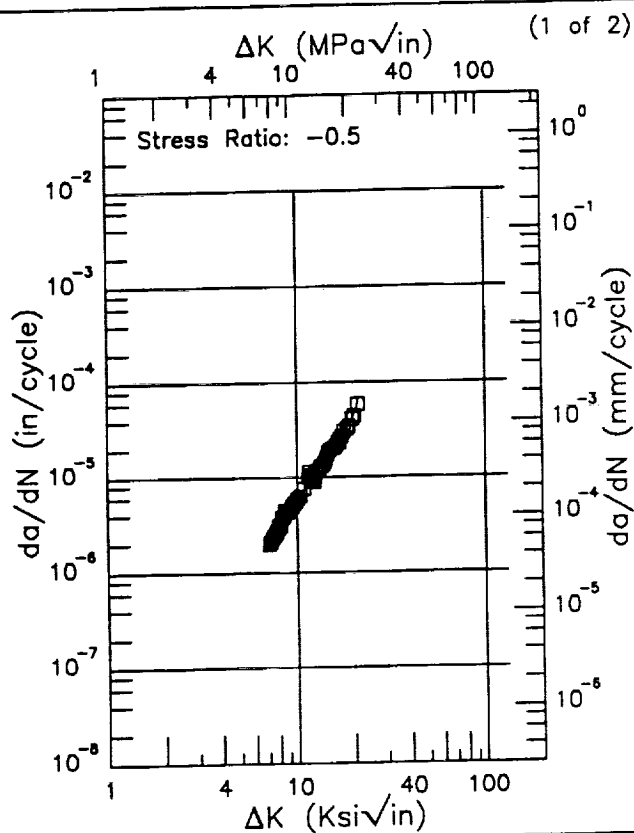
RMS %  
 Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

Condition/Ht: T8151  
 Form: 6 in. Plate  
 Specimen Type: CCP (max load specified)  
 Orientation: L-T  
 Frequency: 2 Hz  
 Environment: HHA; RT

Yield Strength: 54 ksi  
 Ult. Strength:  
 Specimen Thk: 0.25 in.  
 Specimen Width: 3.998 - 4 in.  
 Ref: F22

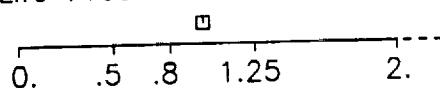


ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
7.07 (min)	1.92
8.	3.05
9.	4.46
10.	6.08
13.	12.4
16.	22.4
20.	45.1
20.94 (max)	58.4

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
5.97 (min)	0.700
6.	0.712
7.	1.31
8.	2.40
9.	3.85
10.	5.61
13.	14.9
15.33 (max)	42.6

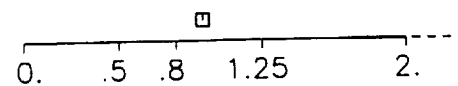
RMS %  
 Error  
 6.90

Life Prediction Ratio Summary



RMS %  
 Error  
 8.14

Life Prediction Ratio Summary

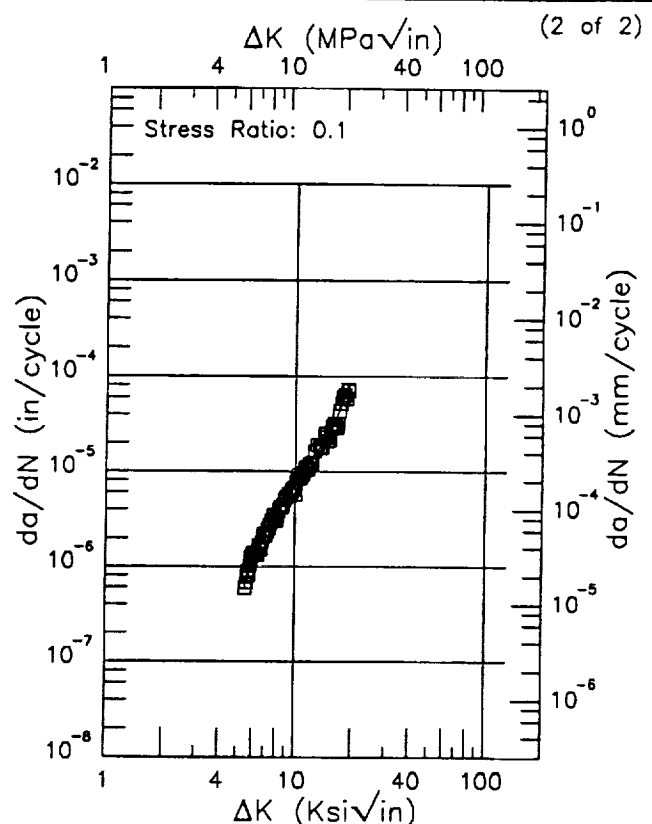
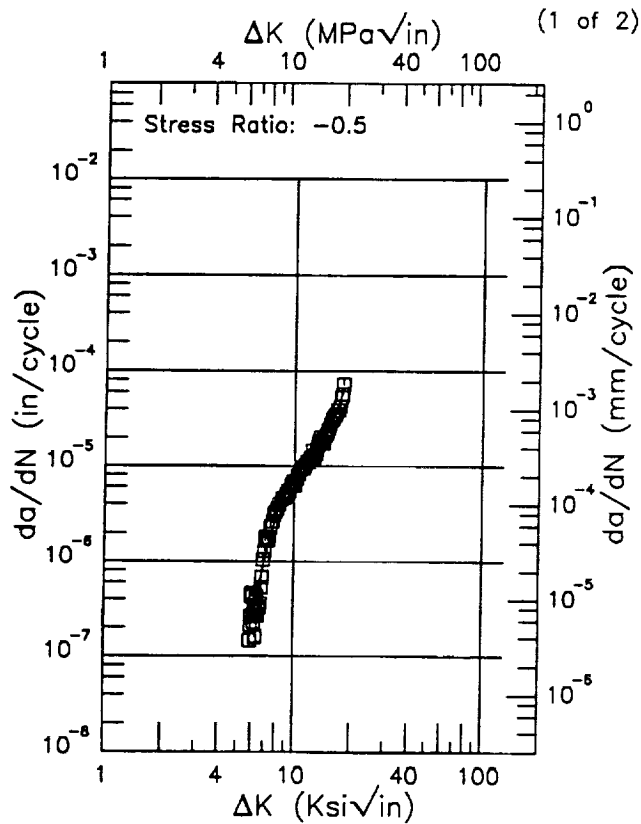




R 2124

Condition/Ht: T8151  
 Form: 6 in. Plate  
 Specimen Type: CCP (max load specified)  
 Orientation: L-T  
 Frequency: 2 Hz  
 Environment: JP4; RT

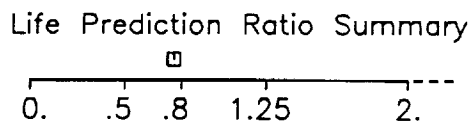
Yield Strength: 54 ksi  
 Ult. Strength:  
 Specimen Thk: 0.252 - 0.255 in.  
 Specimen Width: 3.993 - 4 in.  
 Ref: F22



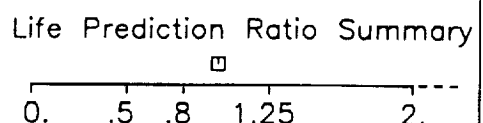
$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
5.89 (min)	0.185
6.	0.225
7.	1.06
8.	3.01
9.	5.55
10.	7.49
13.	14.7
16.	31.6
17.95 (max)	63.6

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
5.50 (min)	0.707
6.	1.14
7.	2.21
8.	3.47
9.	5.04
10.	7.12
13.	16.0
16.	31.2
18.98 (max)	76.2

RMS %  
 Error  
 25.81



RMS %  
 Error  
 8.61

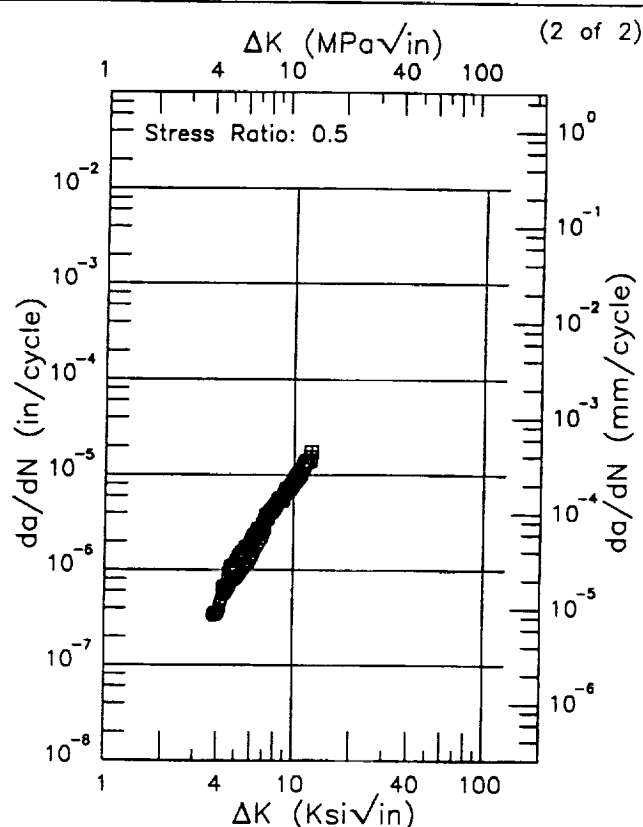
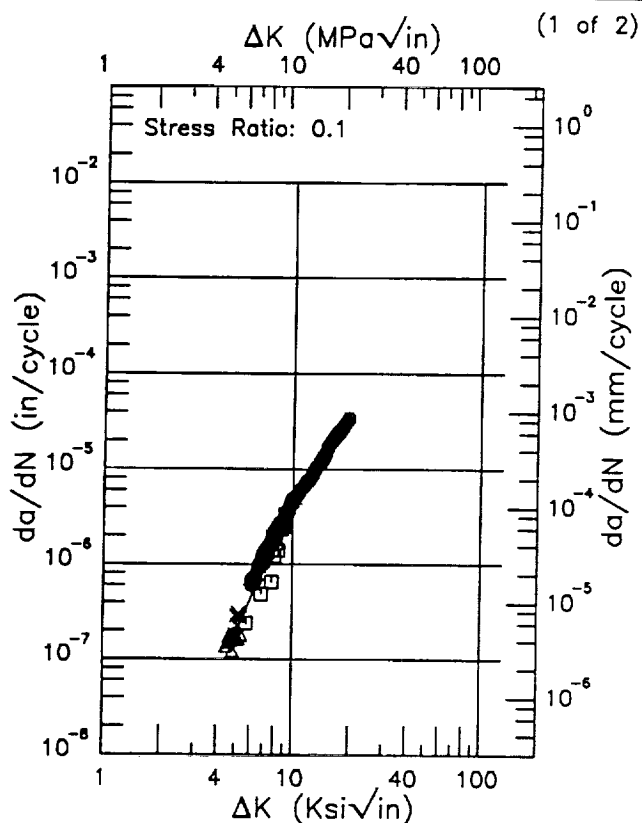


C1-10

R 7050

Condition/Ht: T7451  
Form: 6 in. Plate  
Specimen Type: CT  
Orientation: L-T  
Frequency: 2 Hz  
Environment: HHA; RT

Yield Strength: 54 - 62.5 ksi  
Ult. Strength:  
Specimen Thk: 0.495 - 0.499 in.  
Specimen Width: 4.998 - 5.003 in.  
Ref: F22



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
4.46 (min)	0.132
5.	0.186
6.	0.433
7.	0.997
8.	1.95
9.	3.12
10.	4.39
13.	10.0
16.	20.0
19.37 (max)	32.8

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
3.76 (min)	0.300
4.	0.400
5.	0.973
6.	1.80
7.	3.00
8.	4.68
9.	6.67
10.	8.69
12.33 (max)	16.9

RMS %  
Error  
14.17

Life Prediction Ratio Summary  
+ x  
0. .5 .8 1.25 2.

RMS %  
Error  
13.36

Life Prediction Ratio Summary  
0. .5 .8 1.25 2.

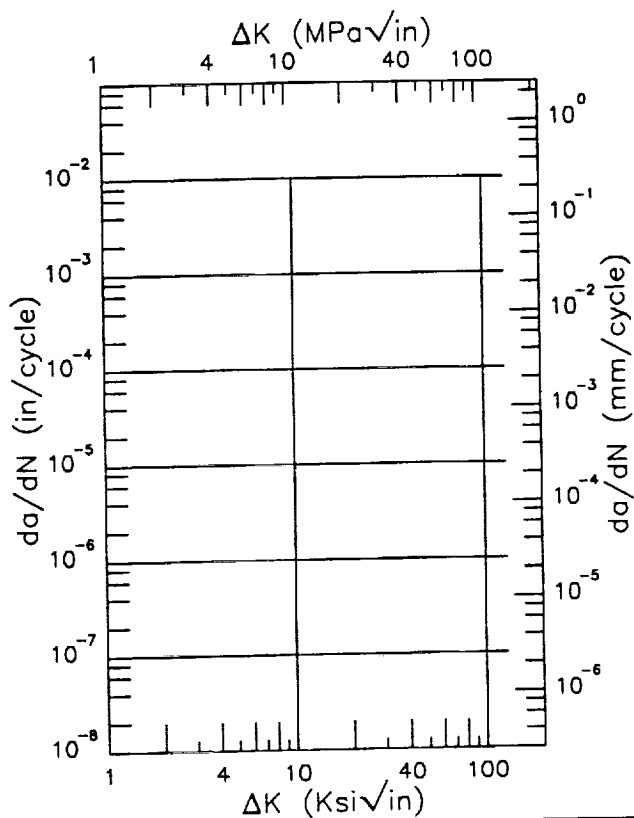
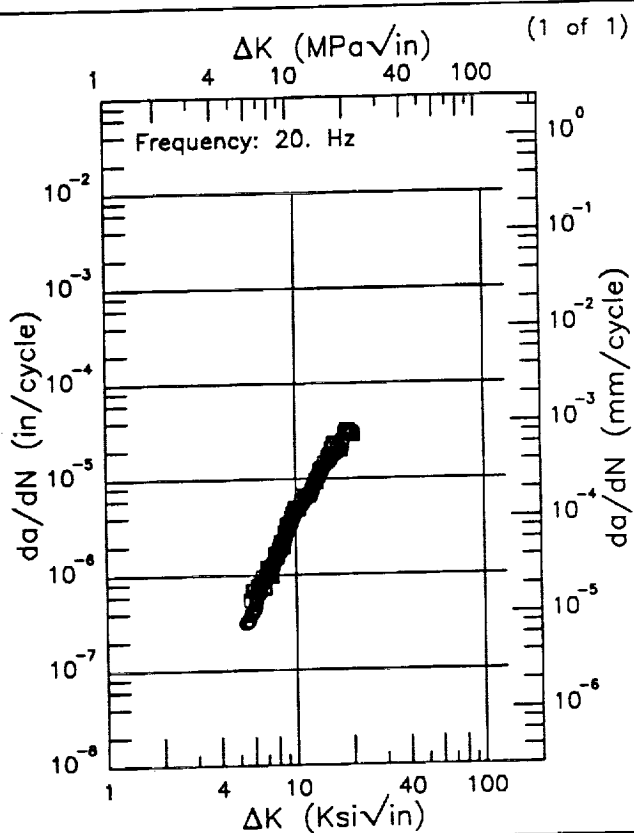
C1-11

PAGE C1-10 INTENTIONALLY BLANK

PREVIOUS PAGE BLANK NOT FILMED

Condition/Ht: T7451  
 Form: Plate  
 Specimen Type: CT  
 Orientation: L-T  
 Stress Ratio: 0.1  
 Environment: 220F; RT

Yield Strength: 60 ksi  
 Ult. Strength:  
 Specimen Thk: 0.494 - 0.499 in.  
 Specimen Width: 4.997 - 5.001 in.  
 Ref: F22

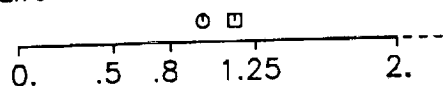


ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
5.35 (min)	0.313
6.	0.503
7.	0.975
8.	1.73
9.	2.80
10.	4.19
13.	9.95
16.	18.8
20.	32.0
20.16 (max)	32.3

ΔK (Ksi√in) da/dN (10<sup>-6</sup> in/cycle)

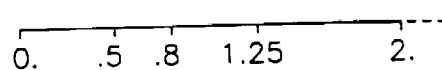
RMS %  
 Error  
 11.95

Life Prediction Ratio Summary



RMS %  
 Error

Life Prediction Ratio Summary



R 7050

Condition/Ht: T7451

Form: Plate

Specimen Type: CT

Orientation: T-L

Frequency: 2 Hz

Environment: HHA; RT

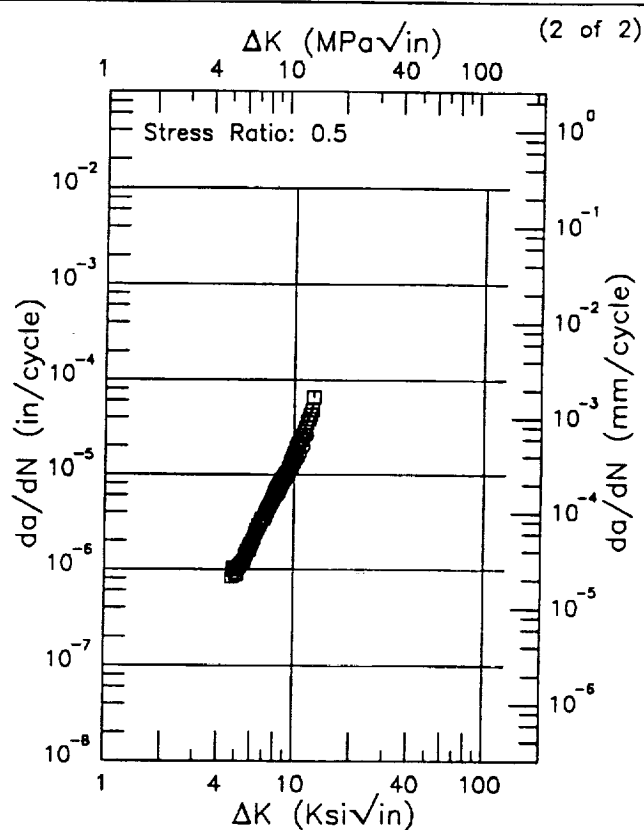
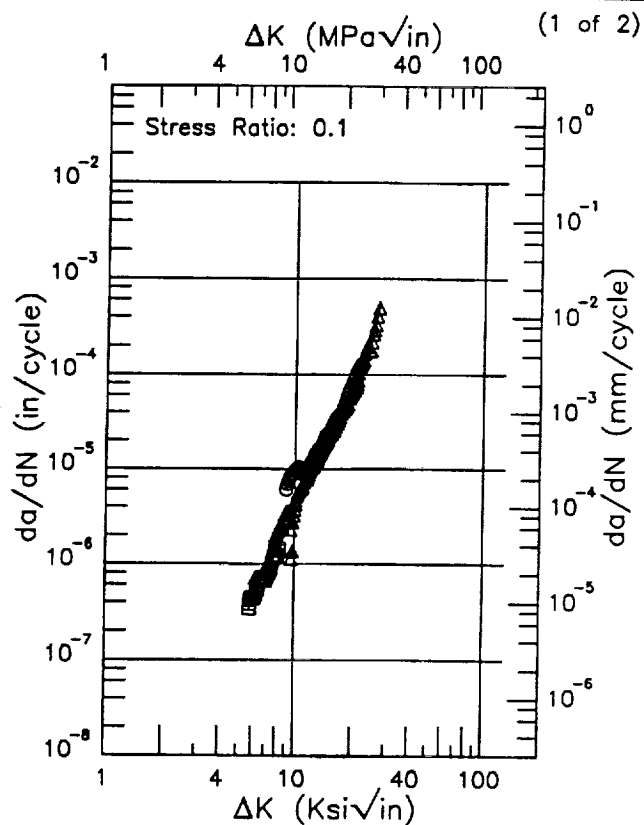
Yield Strength: 60 - 60.5 ksi

Ult. Strength:

Specimen Thk: 0.495 - 0.499 in.

Specimen Width: 4.982 - 5.001 in.

Ref: F22



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
5.76 (min)	0.386
6.	0.430
7.	0.801
8.	1.63
9.	3.19
10.	5.60
13.	14.8
16.	27.4
20.	78.6
25.	241.
27.11 (max)	476.

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
4.72 (min)	0.871
5.	1.00
6.	1.89
7.	3.61
8.	6.21
9.	9.83
10.	15.1
12.66 (max)	58.8

RMS %  
Error  
27.19

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

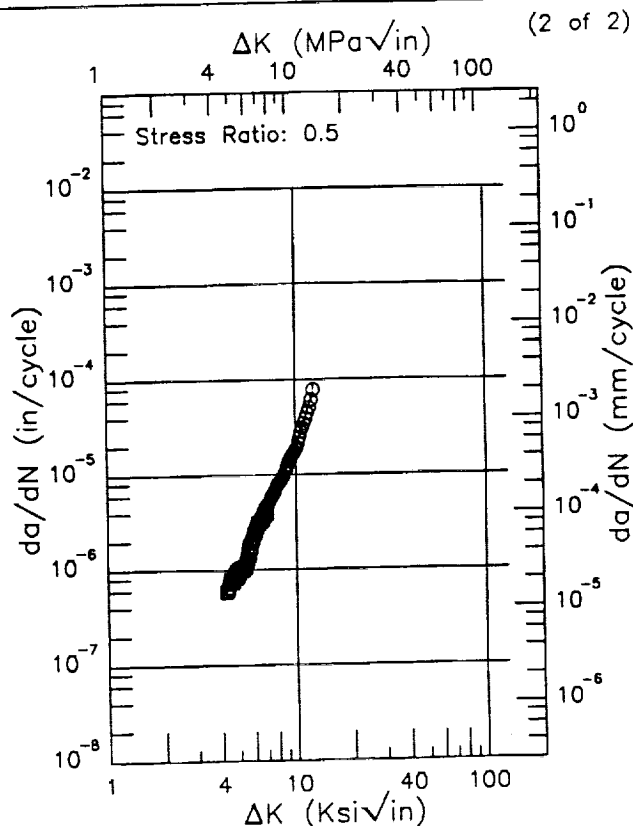
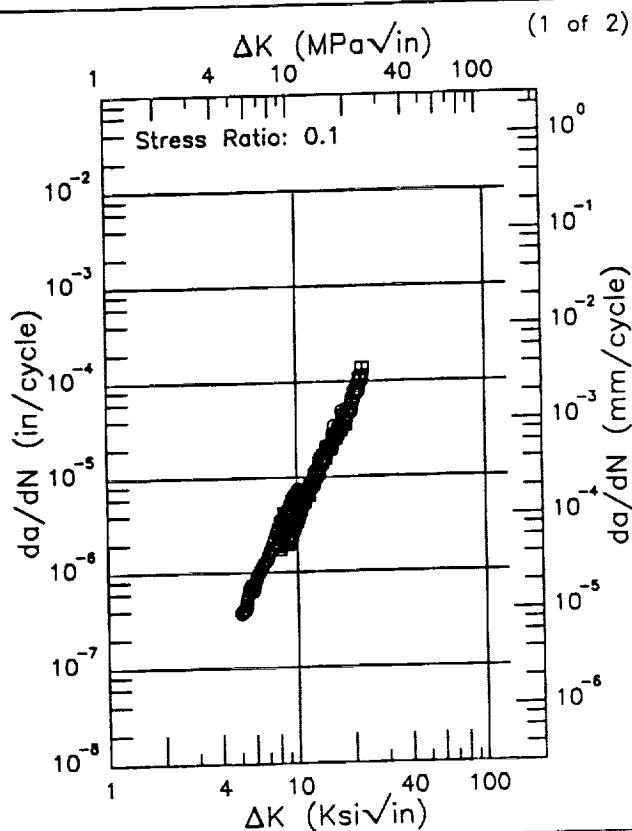
RMS %  
Error  
8.58

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

Condition/Ht: T7451  
 Form: Plate  
 Specimen Type: CT  
 Orientation: T-L  
 Frequency: 2 Hz  
 Environment: JP4; RT

Yield Strength: 60 ksi  
 Ult. Strength:  
 Specimen Thk: 0.495 - 0.499 in.  
 Specimen Width: 4.991 - 5 in.  
 Ref: F22



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
4.99 (min)	0.350
5.	0.356
6.	0.838
7.	1.52
8.	2.39
9.	3.47
10.	4.80
13.	11.4
16.	25.9
20.	69.3
22.34 (max)	114.

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
4.25 (min)	0.688
5.	0.980
6.	2.31
7.	4.64
8.	7.79
9.	12.2
10.	19.3
12.45 (max)	75.0

RMS %  
 Error  
 19.94

Life Prediction Ratio Summary  
  
 0. .5 .8 1.25 2.

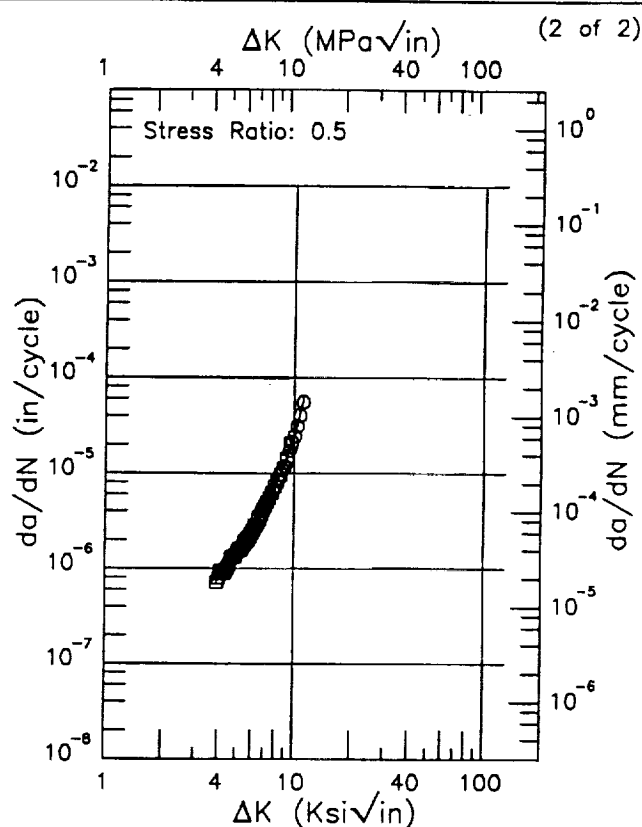
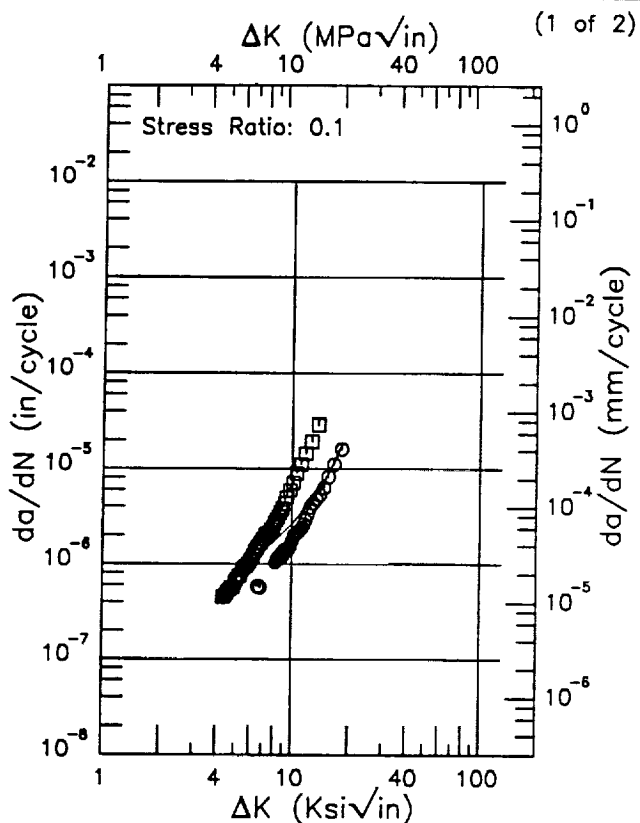
RMS %  
 Error  
 9.30

Life Prediction Ratio Summary  
  
 0. .5 .8 1.25 2.

R 7050

Condition/Ht: T7451  
Form: 5.68 in. Plate  
Specimen Type: CT  
Orientation: S-L  
Frequency: 2 Hz  
Environment: HHA; RT

Yield Strength: 60 ksi  
Ult. Strength:  
Specimen Thk: 0.498 - 0.503 in.  
Specimen Width: 2.626 - 3.007 in.  
Ref: F22



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
4.28 (min)	0.428
5.	0.671
6.	1.01
7.	1.36
8.	1.72
9.	2.13
10.	2.62
13.	4.96
16.	10.1
18.07 (max)	17.3

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
3.93 (min)	0.731
4.	0.780
5.	1.40
6.	2.32
7.	4.22
8.	7.48
9.	13.1
10.	24.5
11.15 (max)	54.4

RMS %  
Error  
78.84

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

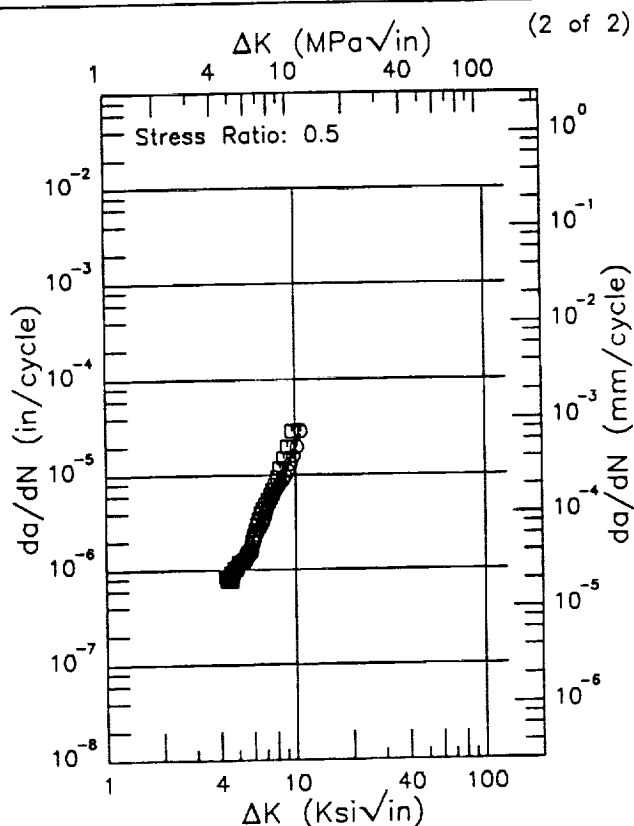
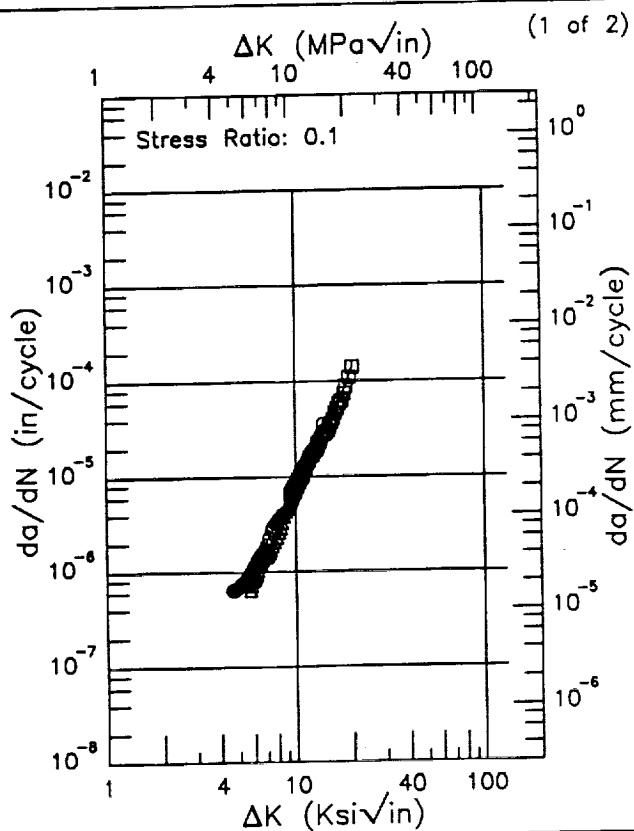
RMS %  
Error  
4.92

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

Condition/Ht: T7451  
 Form: Plate  
 Specimen Type: CT  
 Orientation: S-L  
 Frequency: 2 Hz  
 Environment: JP4; RT

Yield Strength: 60 ksi  
 Ult. Strength:  
 Specimen Thk: 0.496 - 0.499 in.  
 Specimen Width: 2.999 - 3 in.  
 Ref: F22

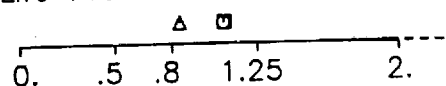


ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
4.58 (min)	0.645
5.	0.692
6.	1.01
7.	1.69
8.	2.88
9.	4.78
10.	7.57
13.	21.2
16.	44.2
20.	138.
20.03 (max)	139.

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
4.24 (min)	0.769
5.	1.08
6.	2.11
7.	4.62
8.	8.29
9.	12.7
10.	19.8
10.68 (max)	27.6

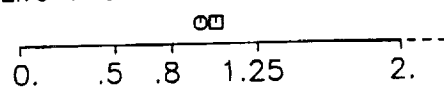
RMS %  
 Error  
 11.35

Life Prediction Ratio Summary



RMS %  
 Error  
 13.96

Life Prediction Ratio Summary





F 7050

Condition/Ht: T7451

Form: Plate

Specimen Type: CT

Orientation: S-L

Stress Ratio: 0.1

Environment: 220F; RT

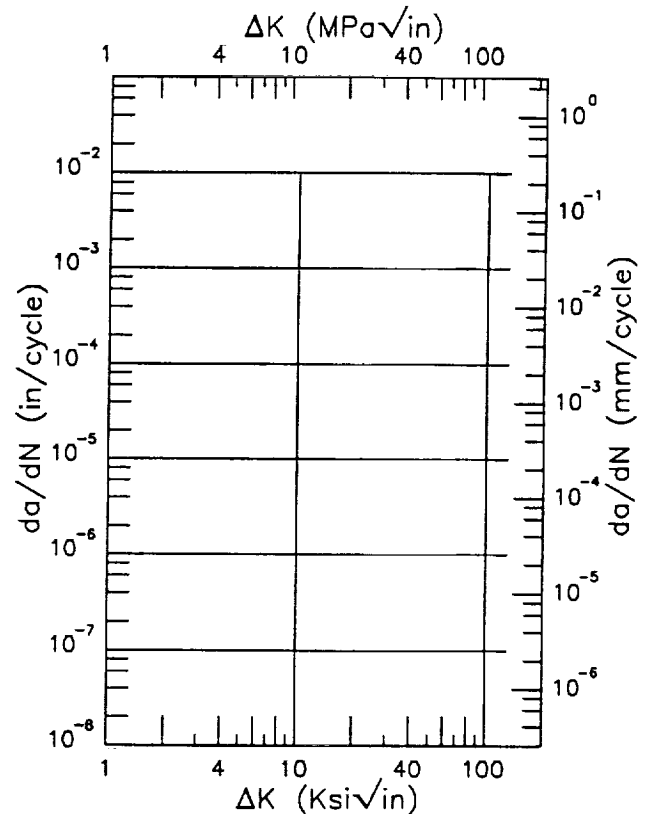
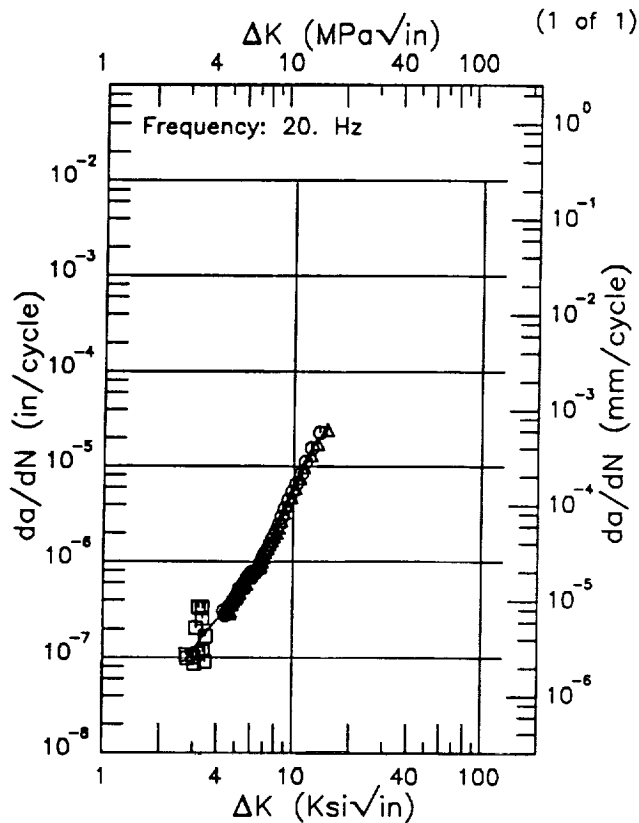
Yield Strength: 60 ksi

Ult. Strength:

Specimen Thk: 0.496 - 0.498 in.

Specimen Width: 2.997 - 2.999 in.

Ref: F22

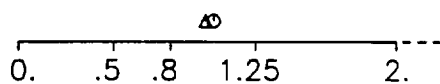


$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
2.74 (min)	0.0939
3.	0.123
3.5	0.184
4.	0.251
5.	0.421
6.	0.690
7.	1.16
8.	2.00
9.	3.38
10.	5.54
13.	17.7
14.89 (max)	24.5

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
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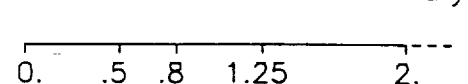
RMS %  
Error  
20.31

Life Prediction Ratio Summary



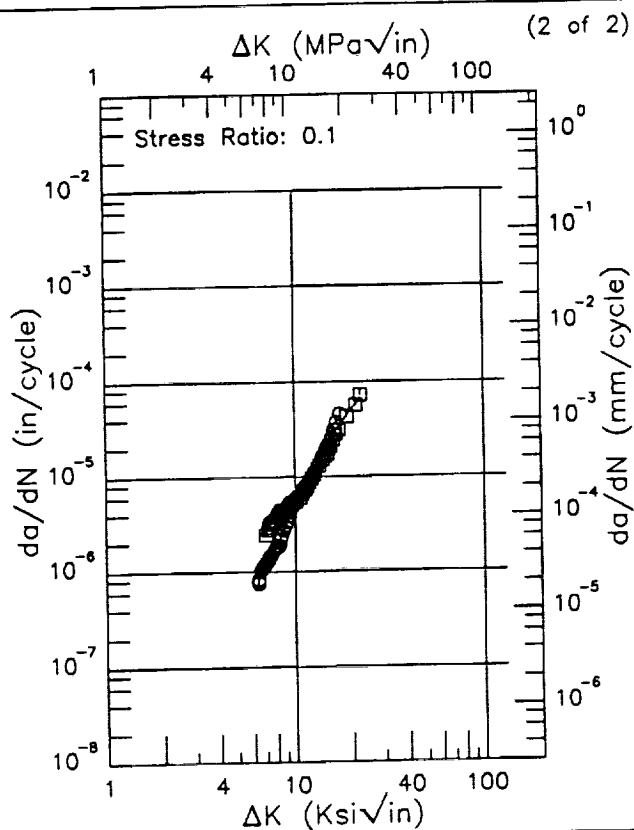
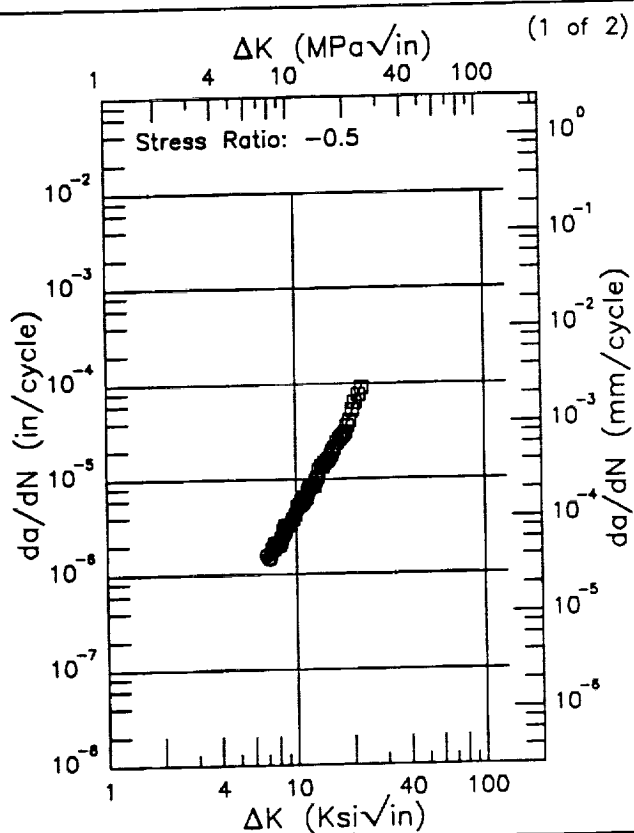
RMS %  
Error

Life Prediction Ratio Summary



Condition/Ht: T7451  
 Form: 6 in. Plate  
 Specimen Type: CCP (max load specified)  
 Orientation: L-T  
 Frequency: 2 Hz  
 Environment: HHA; RT

Yield Strength: 60 ksi  
 Ult. Strength:  
 Specimen Thk: 0.249 - 0.252 in.  
 Specimen Width: 4 - 4.002 in.  
 Ref: F22



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
6.88 (min)	1.40
7.	1.46
8.	2.12
9.	3.12
10.	4.51
13.	10.9
16.	21.0
20.	51.8
22.38 (max)	96.6

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
6.30 (min)	0.727
7.	1.44
8.	2.66
9.	3.93
10.	5.28
13.	12.3
16.	27.2
20.	50.5
22.33 (max)	66.4

RMS %  
 Error  
 6.19

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS %  
 Error  
 23.74

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

R

7050

Condition/Ht: T7451

Form: 6 in. Plate

Specimen Type: CCP (max load specified)

Orientation: L-T

Frequency: 2 Hz

Environment: JP4; RT

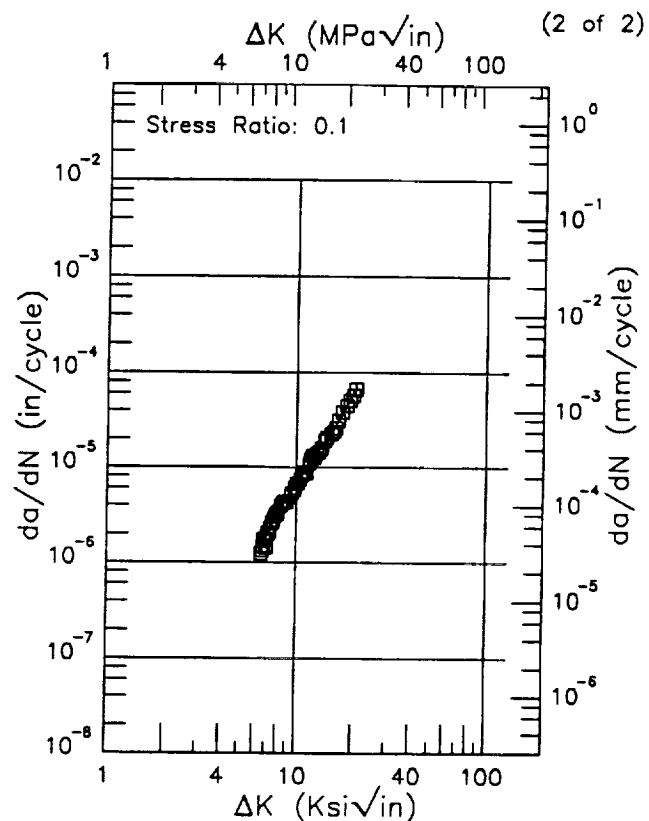
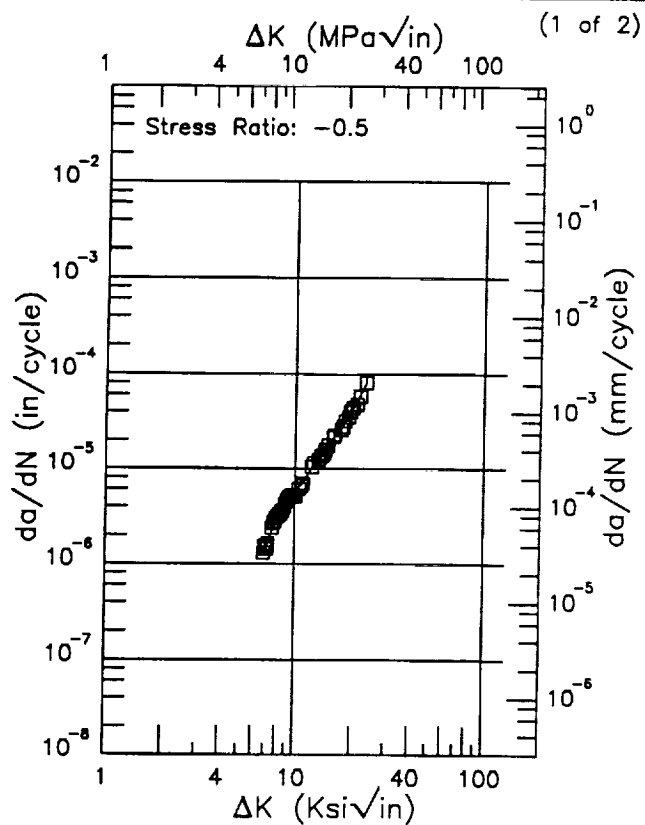
Yield Strength: 60 ksi

Ult. Strength:

Specimen Thk: 0.251 in.

Specimen Width: 3.997 - 4.002 in.

Ref: F22

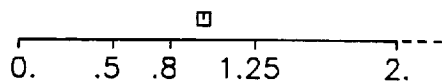


ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
6.82 (min)	1.24
7.	1.48
8.	2.92
9.	4.31
10.	5.65
13.	11.9
16.	21.9
20.	41.5
23.37 (max)	80.0

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
6.54 (min)	1.24
7.	1.86
8.	3.30
9.	4.76
10.	6.41
13.	14.6
16.	26.2
20.	59.4
20.63 (max)	63.9

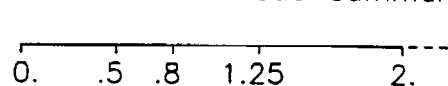
RMS %  
Error  
5.33

Life Prediction Ratio Summary



RMS %  
Error  
6.80

Life Prediction Ratio Summary



C1-20

R 7475

Condition/Ht: T7351

Form: Plate

Specimen Type: CT

Orientation: L-T

Frequency: 2 Hz

Environment: JP4; RT

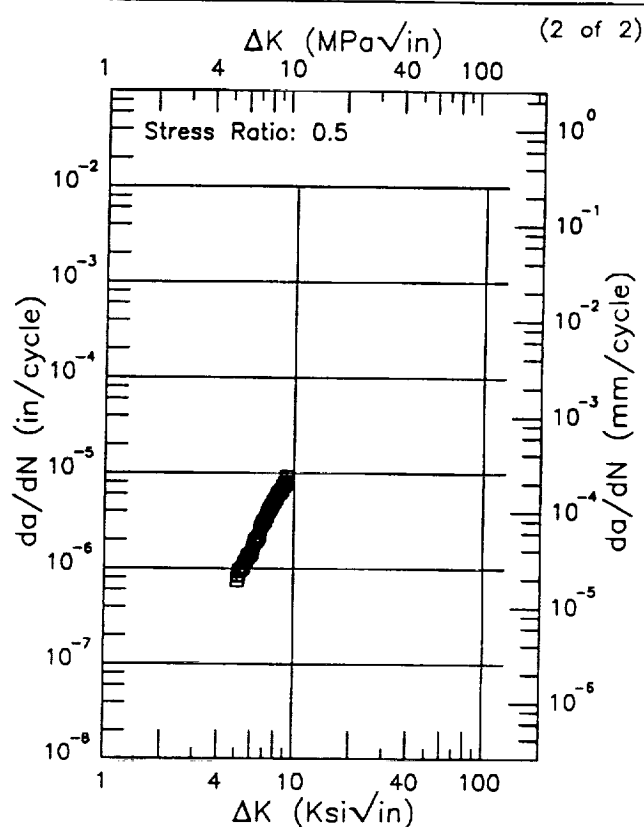
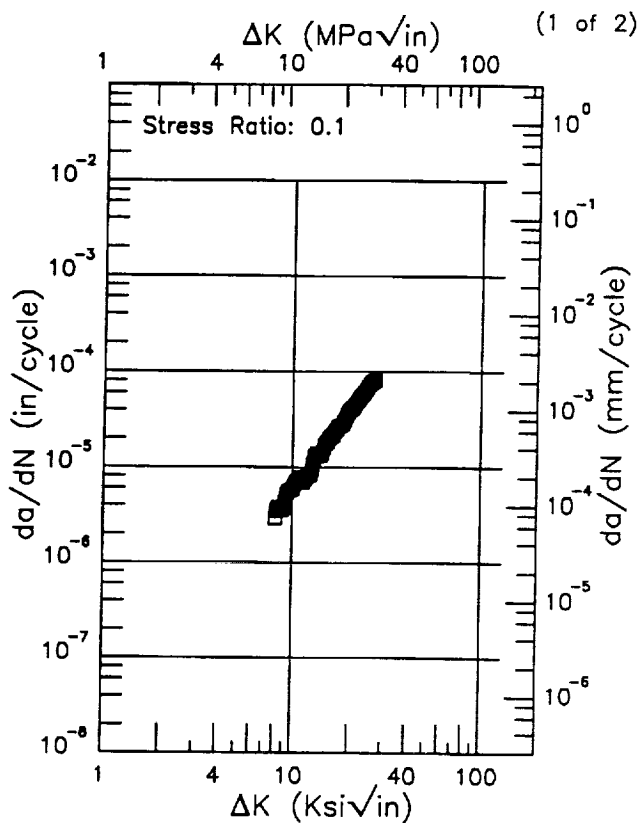
Yield Strength: 48 ksi

Ult. Strength:

Specimen Thk: 0.497 in.

Specimen Width: 4.993 - 4.994 in.

Ref: F22



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
8.07 (min)	3.01
9.	4.36
10.	5.81
13.	11.2
16.	21.2
20.	38.7
25.	71.3
26.96 (max)	81.0

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
5.02 (min)	0.791
6.	1.52
7.	3.18
8.	5.35
9.	7.96
9.15 (max)	8.61

RMS %  
Error  
6.94

Life Prediction Ratio Summary  
0. .5 .8 1.25 2.

RMS %  
Error  
2.91

Life Prediction Ratio Summary  
0. .5 .8 1.25 2.

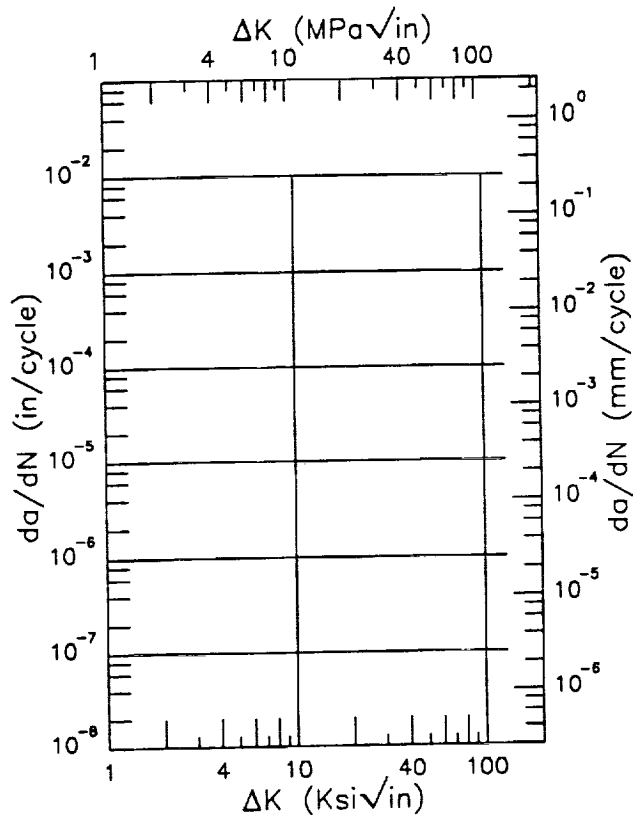
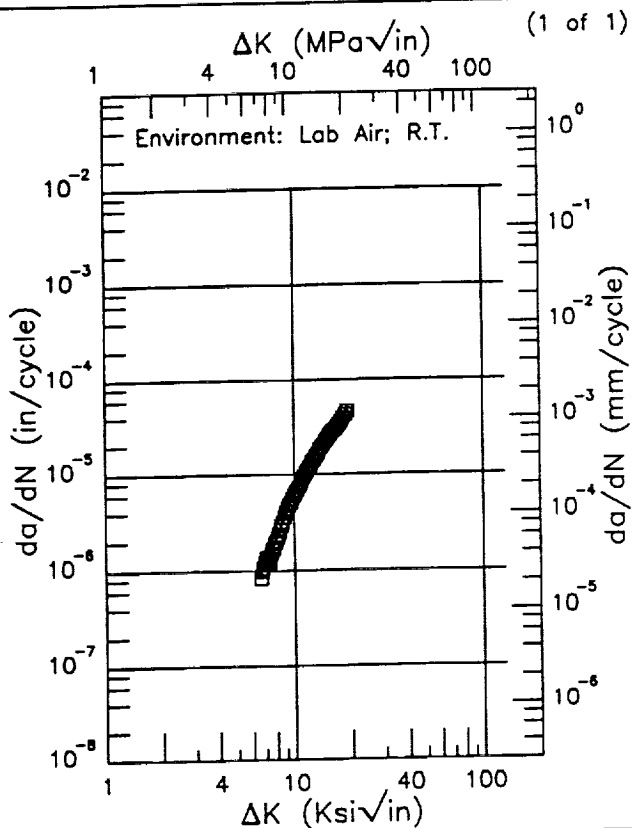
C1-21

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Condition/Ht: T7351  
 Form: Plate  
 Specimen Type: CT  
 Orientation: L-T  
 Stress Ratio: 0.1  
 Frequency: 2 Hz

Yield Strength: 48 ksi  
 Ult. Strength:  
 Specimen Thk: 0.498 in.  
 Specimen Width: 4.999 in.  
 Ref: F22



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
6.60 (min)	0.974
7.	1.18
8.	2.11
9.	3.83
10.	6.22
13.	15.4
16.	28.8
19.10 (max)	46.5

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
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RMS %  
 Error  
 4.67

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS %  
 Error

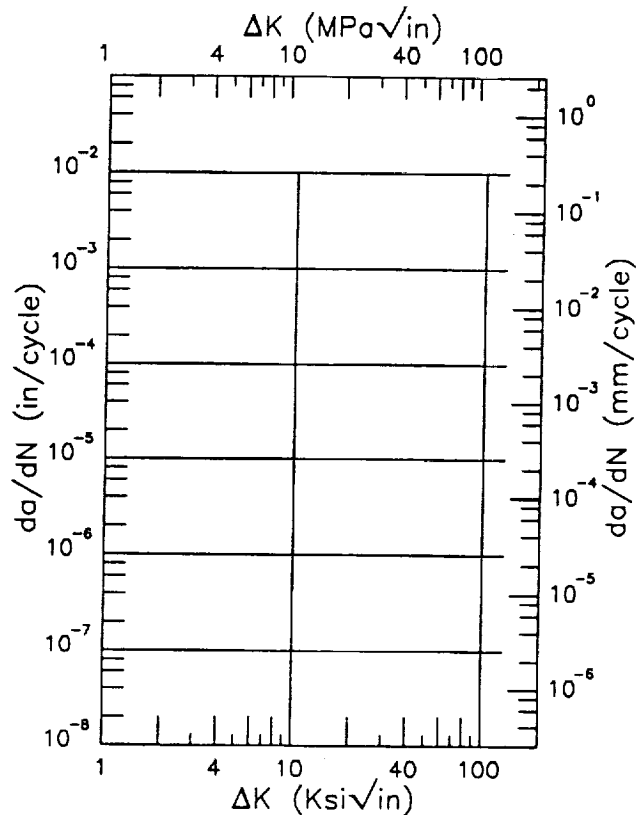
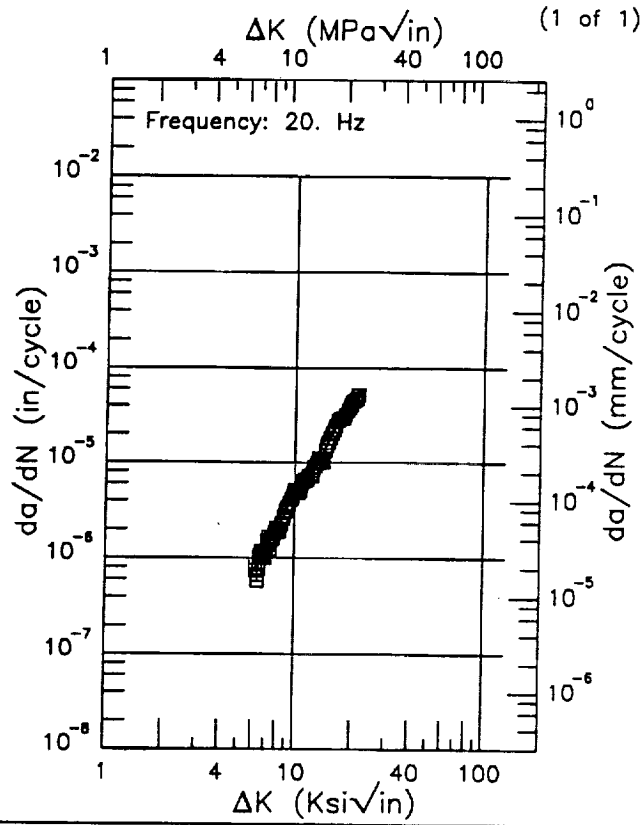
Life Prediction Ratio Summary

0. .5 .8 1.25 2.

F 7475

Condition/Ht: T7351  
 Form: Plate  
 Specimen Type: CT  
 Orientation: L-T  
 Stress Ratio: 0.1  
 Environment: 220F; RT

Yield Strength: 48 ksi  
 Ult. Strength:  
 Specimen Thk: 0.496 in.  
 Specimen Width: 4.997 in.  
 Ref: F22



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
6.19 (min)	0.763
7.	1.15
8.	1.96
9.	3.16
10.	4.59
13.	9.44
16.	22.0
20.	41.7
21.35 (max)	52.1

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
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RMS %  
 Error  
 9.05

Life Prediction Ratio Summary

0. .5 .8 1.25 2.---

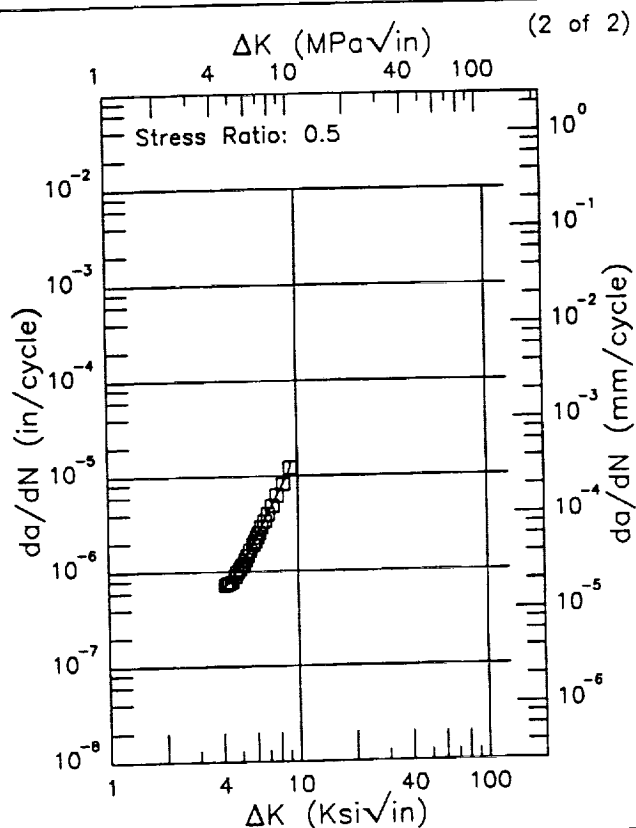
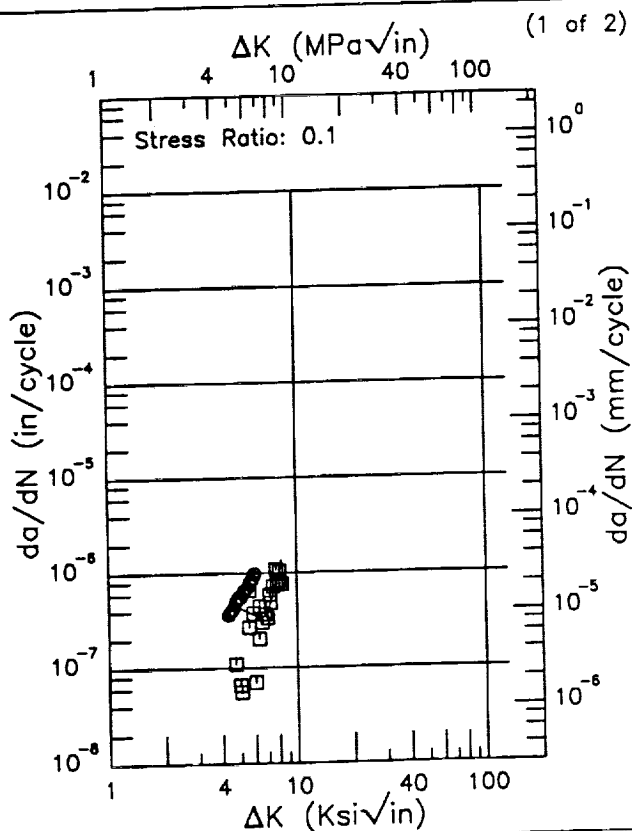
RMS %  
 Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.---

Condition/Ht: T7351  
 Form: Plate  
 Specimen Type: CT  
 Orientation: S-L  
 Frequency: 2 Hz  
 Environment: JP4; RT

Yield Strength: 48 ksi  
 Ult. Strength:  
 Specimen Thk: 0.248 - 0.252 in.  
 Specimen Width: 1.999 - 2.002 in.  
 Ref: F22



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
4.31 (min)	0.329
5.	0.430
6.	0.360
7.	0.409
8.	0.933
8.28 (max)	1.36

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
4.14 (min)	0.701
5.	1.10
6.	2.16
7.	4.06
8.	6.78
9.	11.2
9.12 (max)	12.1

RMS %  
 Error  
 61.03

Life Prediction Ratio Summary  

 0. .5 .8 1.25 2.

RMS %  
 Error  
 2.45

Life Prediction Ratio Summary  

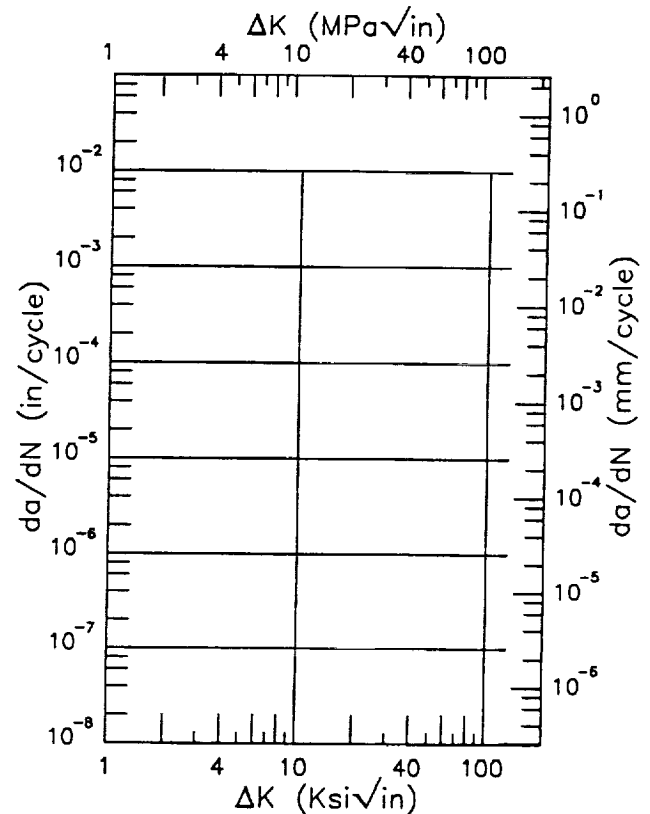
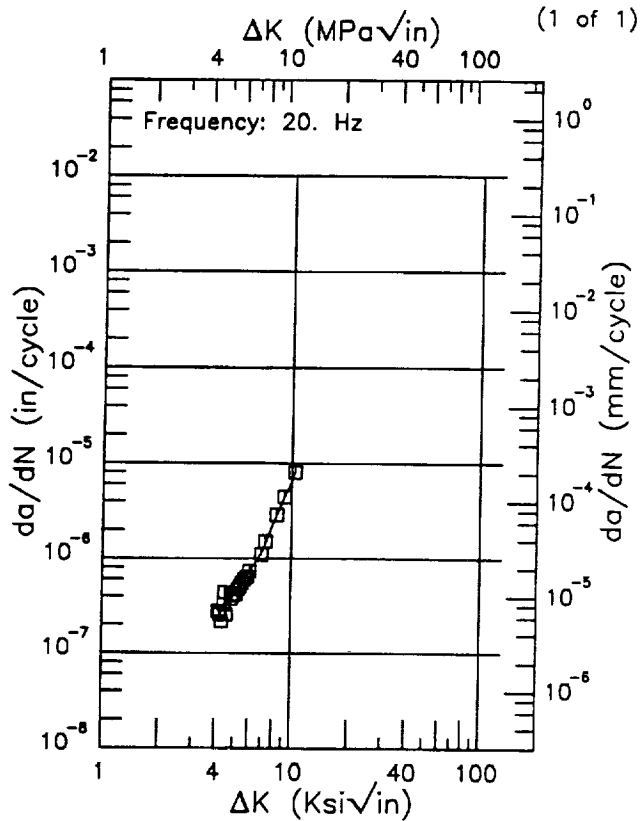
 0. .5 .8 1.25 2.



F 7475

Condition/Ht: T7351  
 Form: Plate  
 Specimen Type: CT  
 Orientation: S-L  
 Stress Ratio: 0.1  
 Environment: 220F; RT

Yield Strength: 48 ksi  
 Ult. Strength:  
 Specimen Thk: 0.249 in.  
 Specimen Width: 2 in.  
 Ref: F22



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
4.13 (min)	0.243
5.	0.402
6.	0.715
7.	1.19
8.	2.34
9.	4.17
10.	6.53
10.33 (max)	8.00

$\Delta K$  (Ksi $\sqrt{\text{in}}$ )       $da/dN$  ( $10^{-6}$  in/cycle)

RMS %  
 Error  
 11.81

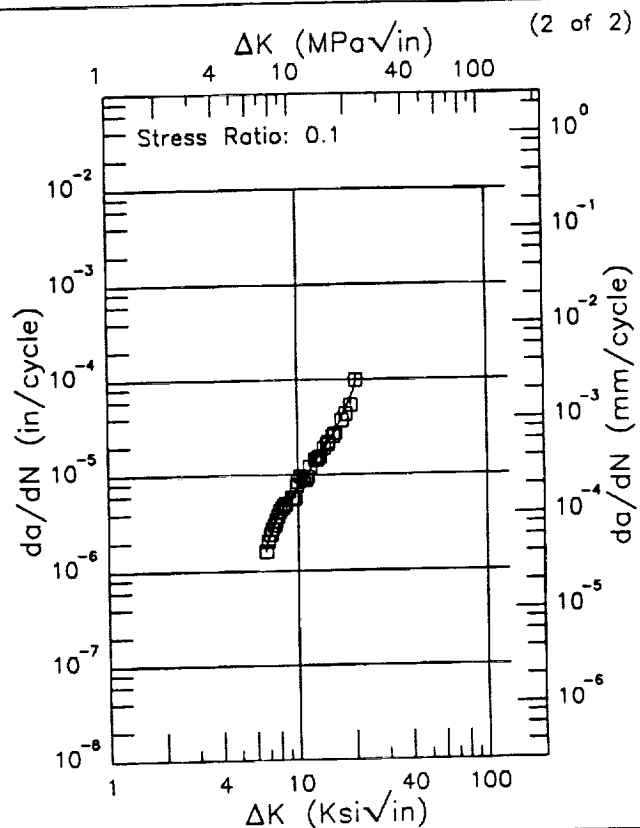
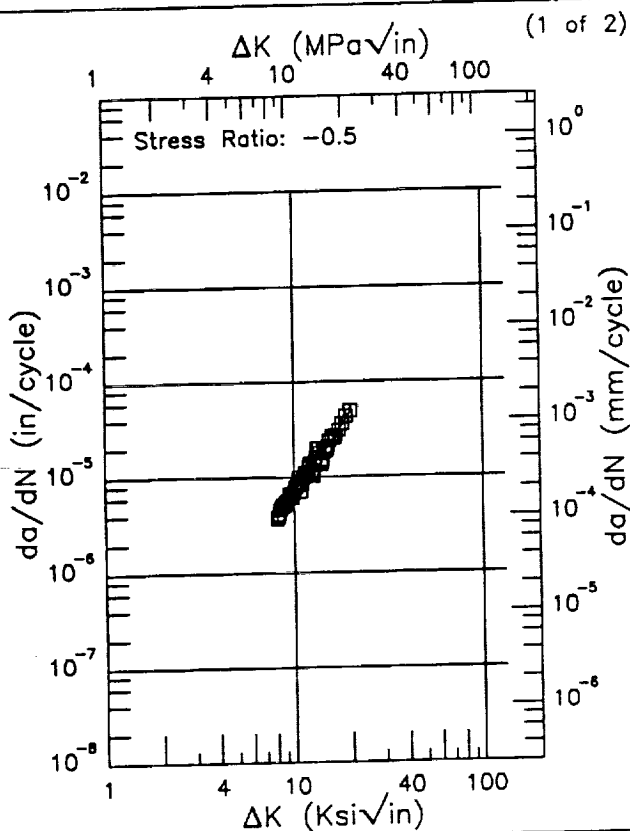
Life Prediction Ratio Summary

RMS %  
 Error

Life Prediction Ratio Summary

Condition/Ht: T7351  
 Form: 4 in. Plate  
 Specimen Type: CCP (max load specified)  
 Orientation: L-T  
 Frequency: 2 Hz  
 Environment: HHA; RT

Yield Strength: 48 ksi  
 Ult. Strength:  
 Specimen Thk: 0.25 - 0.251 in.  
 Specimen Width: 4 in.  
 Ref: F22



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
8.11 (min)	3.93
9.	5.49
10.	7.30
13.	14.3
16.	24.8
19.92 (max)	48.7

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
6.79 (min)	1.76
7.	2.11
8.	3.95
9.	5.75
10.	7.56
13.	15.8
16.	29.1
20.	79.3
20.33 (max)	93.8

RMS %  
 Error  
 10.38

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

RMS %  
 Error  
 8.05

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

R 7475

Condition/Ht: T7351

Form: 4 in. Plate

Specimen Type: CCP (max load specified)

Orientation: L-T

Frequency: 2 Hz

Environment: JP4; RT

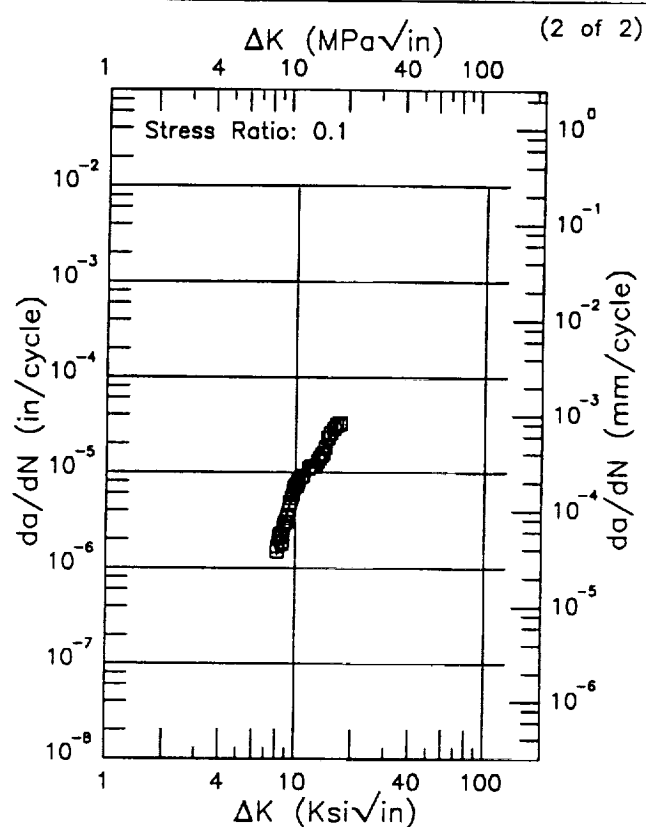
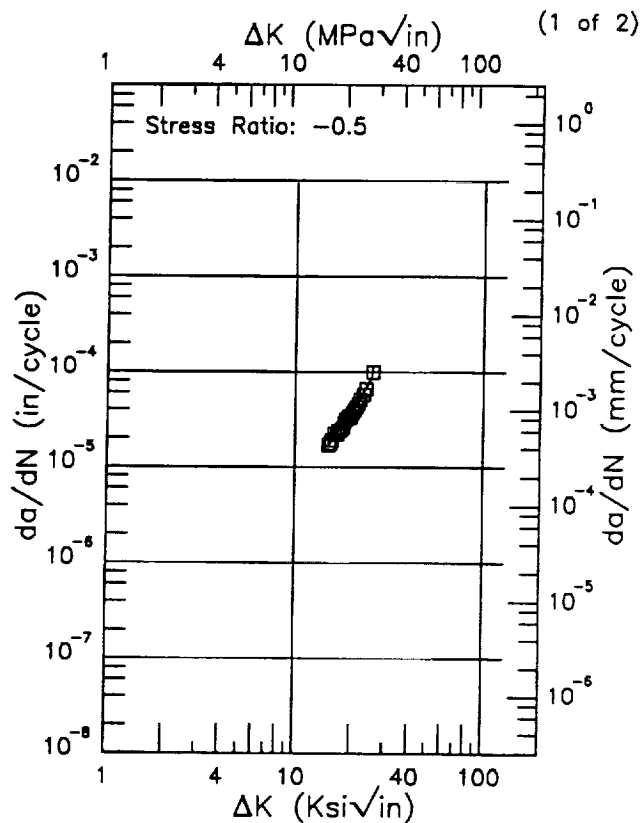
Yield Strength: 48 ksi

Ult. Strength:

Specimen Thk: 0.252 in.

Specimen Width: 3.995 - 3.998 in.

Ref: F22



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
14.96 (min)	16.4
16.	20.6
20.	36.8
25.	85.3
25.62 (max)	98.7

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
8.01 (min)	1.36
9.	3.66
10.	6.51
13.	13.9
16.	27.3
17.02 (max)	38.1

RMS %  
Error  
3.50

Life Prediction Ratio Summary  

 0. .5 .8 1.25 2.

RMS %  
Error  
11.20

Life Prediction Ratio Summary  

 0. .5 .8 1.25 2.

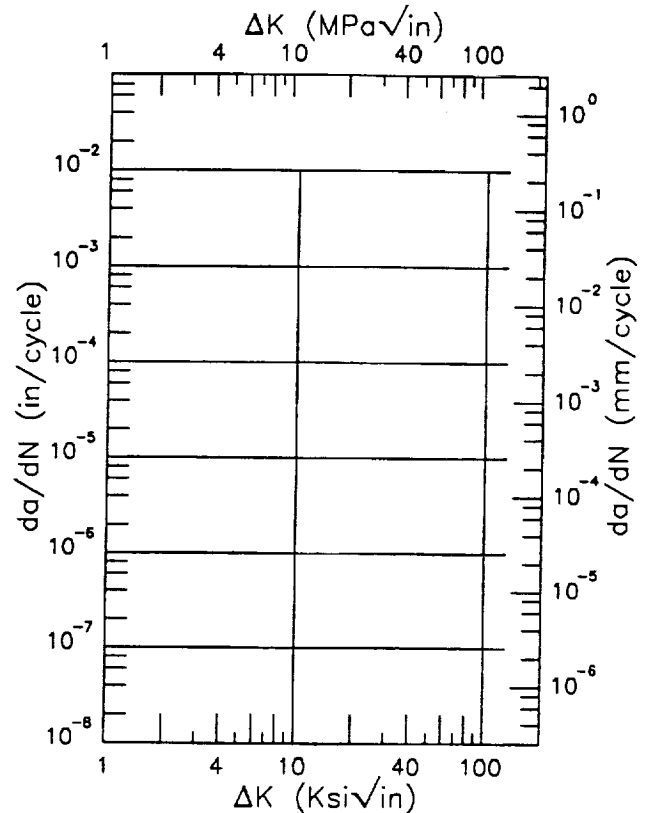
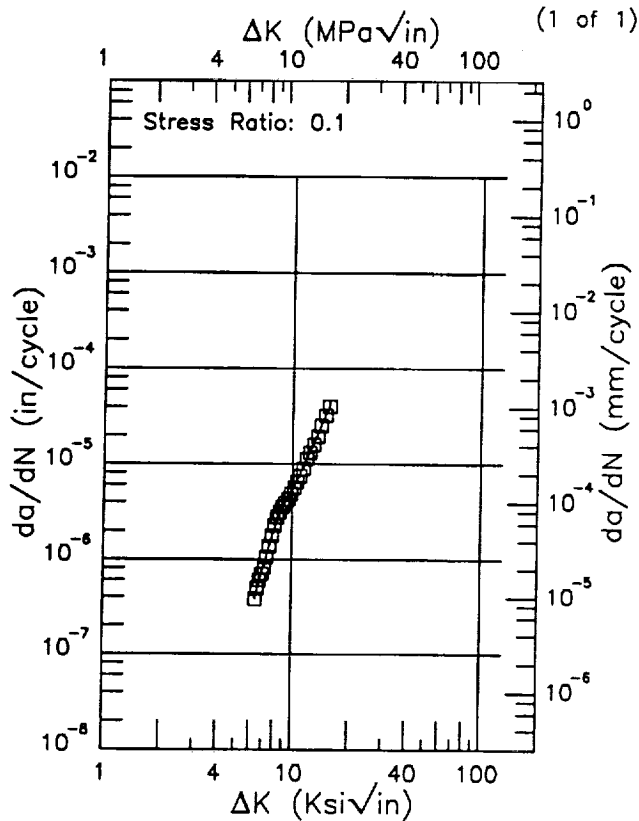
C1-28

R

8090

Condition/Ht: T8771  
 Form: 1.75 in. Plate  
 Specimen Type: CT  
 Orientation: L-T  
 Frequency: 5 Hz  
 Environment: HHA; RT

Yield Strength: 68 ksi  
 Ult. Strength: 77 ksi  
 Specimen Thk: 0.25 in.  
 Specimen Width: 2.004 in.  
 Ref: WLX01



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
6.38 (min)	0.385
7.	0.775
8.	2.06
9.	3.82
10.	5.37
13.	17.3
15.52 (max)	40.5

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
-------------	-----------------------------------

RMS %  
 Error  
 4.98

Life Prediction Ratio Summary

0. .5 .8 1.25 2.---

RMS %  
 Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.---

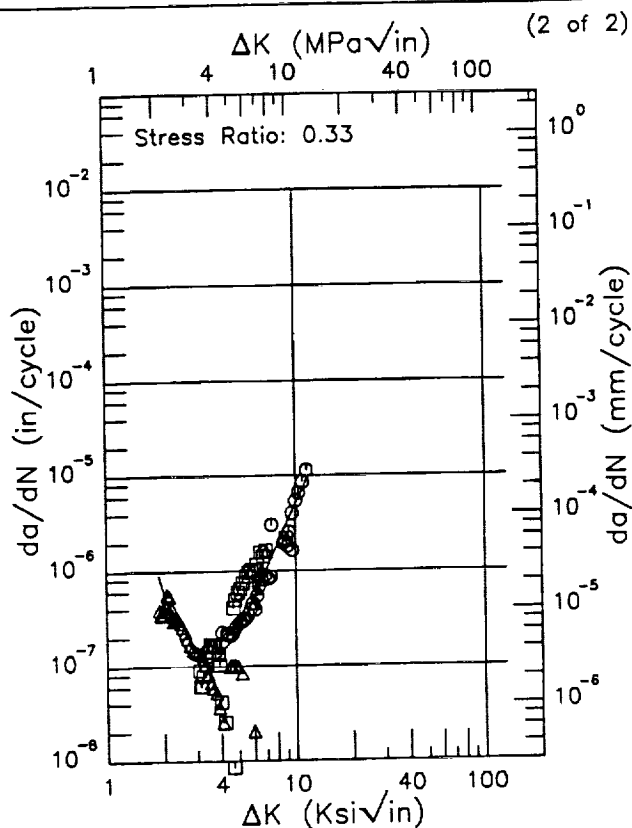
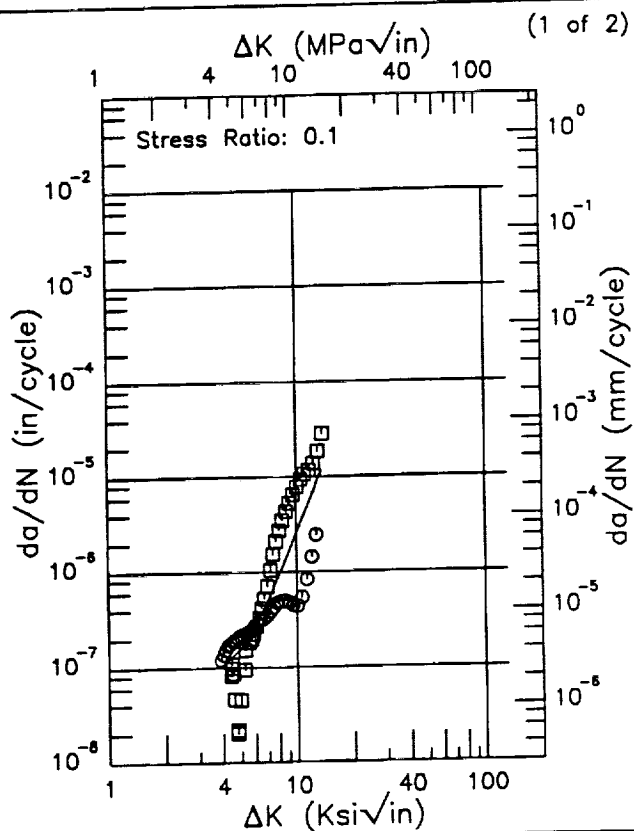
C1-29

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Condition/Ht: T8771  
 Form: 1.75 in. Plate  
 Specimen Type: CT  
 Orientation: L-T  
 Frequency: 25 Hz  
 Environment: HHA; RT

Yield Strength: 68 ksi  
 Ult. Strength: 77 ksi  
 Specimen Thk: 0.248 - 0.249 in.  
 Specimen Width: 2.002 - 2.01 in.  
 Ref: WLX01



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
3.89 (min)	0.104
4.	0.107
5.	0.159
6.	0.280
7.	0.510
8.	0.916
9.	1.59
10.	2.64
13.	9.24
13.70 (max)	11.7

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
1.89 (min)	0.917
2.	0.590
2.5	0.174
3.	0.113
3.5	0.111
4.	0.133
5.	0.249
6.	0.511
7.	1.02
8.	1.88
9.	3.22
10.	5.16
11.43 (max)	9.09

RMS %  
 Error  
 89.72

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS %  
 Error  
 56.60

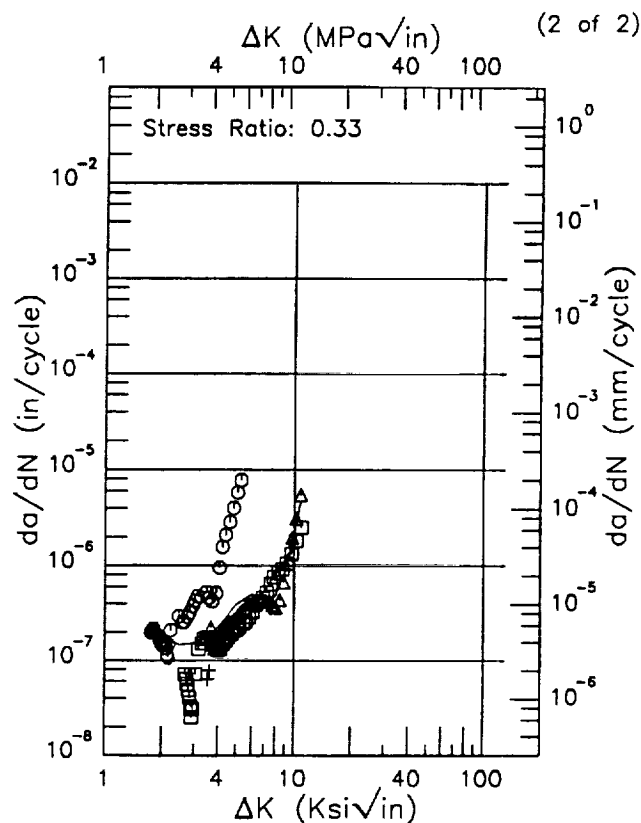
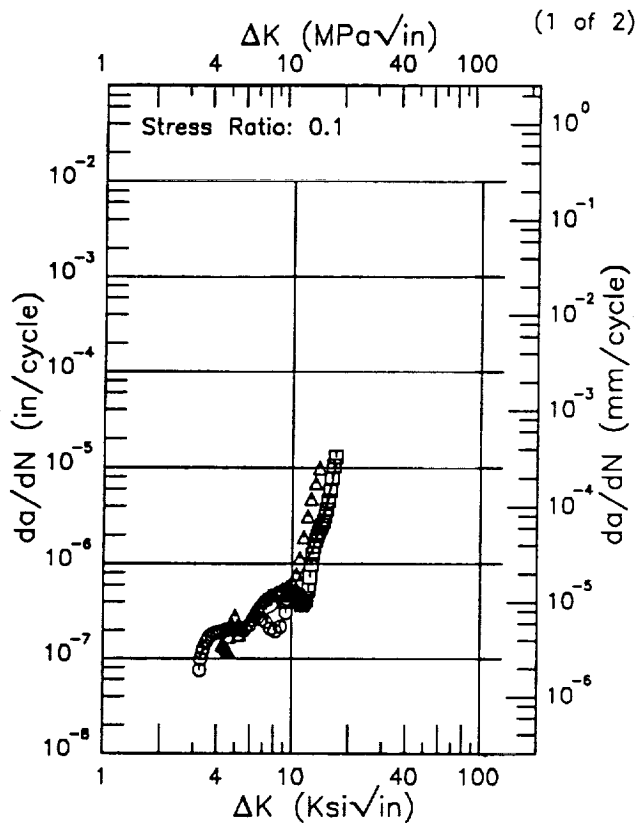
Life Prediction Ratio Summary

0. .5 .8 1.25 2.

R 8090

Condition/Ht: T8771  
 Form: 1.75 in. Plate  
 Specimen Type: CT  
 Orientation: L-T  
 Frequency: 25 Hz  
 Environment: LAB AIR; RT

Yield Strength: 68 ksi  
 Ult. Strength: 77 ksi  
 Specimen Thk: 0.248 - 0.249 in.  
 Specimen Width: 2.001 - 2.006 in.  
 Ref: WLX01



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
3.24 (min)	0.1000
3.5	0.129
4.	0.175
5.	0.230
6.	0.257
7.	0.282
8.	0.322
9.	0.390
10.	0.501
13.	1.49
16.	6.61
16.88 (max)	10.9

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
1.74 (min)	0.219
2.	0.175
2.5	0.146
3.	0.152
3.5	0.179
4.	0.228
5.	0.390
6.	0.503
7.	0.456
8.	0.476
9.	0.863
10.	2.24
10.83 (max)	4.68

RMS %  
 Error  
 63.43

Life Prediction Ratio Summary

□ ○ Δ

0. .5 .8 1.25 2.

RMS %  
 Error  
 >100.0

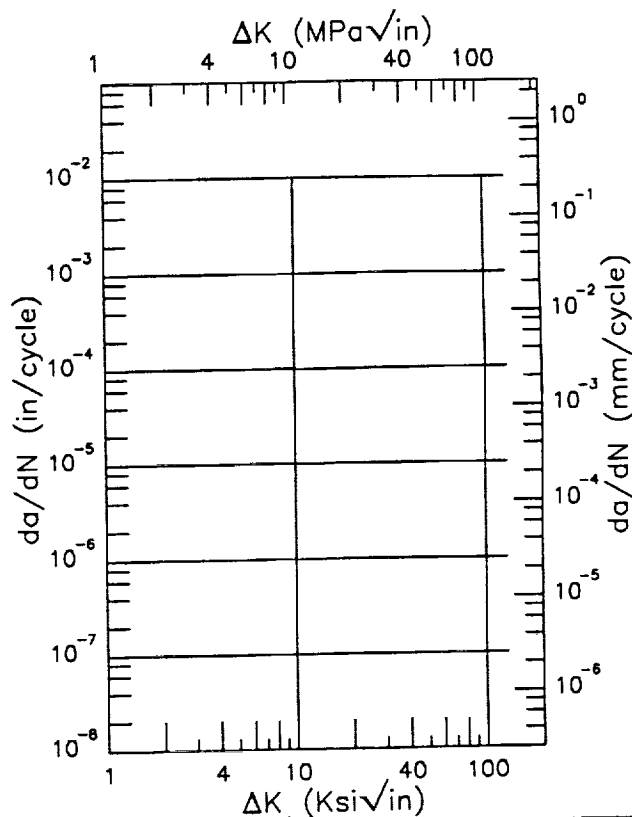
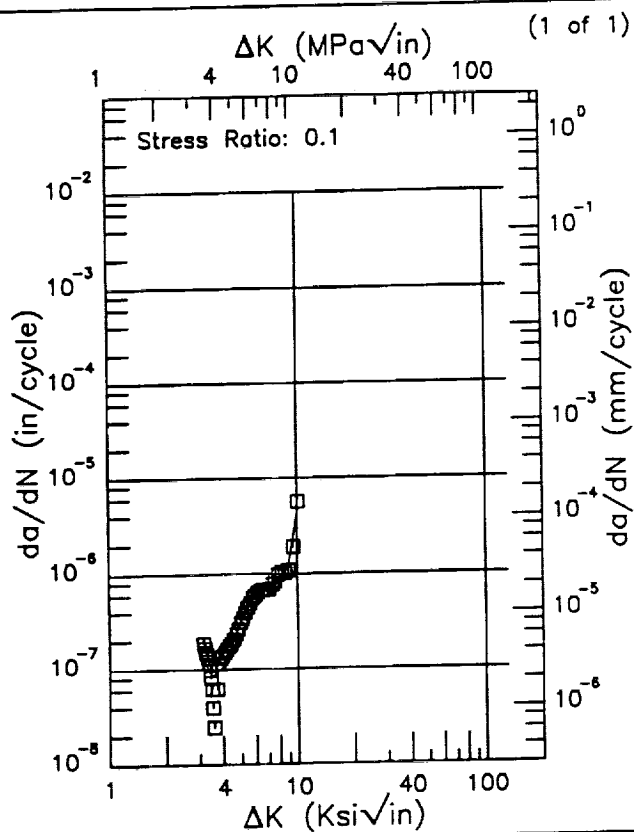
Life Prediction Ratio Summary

□+ Δ ○

0. .5 .8 1.25 2.

Condition/Ht: T8771  
Form: 1.75 in. Plate  
Specimen Type: CT  
Orientation: L-T  
Frequency: 30 Hz  
Environment: LAB AIR; RT

Yield Strength: 68 ksi  
Ult. Strength: 77 ksi  
Specimen Thk: 0.249 in.  
Specimen Width: 2.005 in.  
Ref: WLX01



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ (10 <sup>-6</sup> in/cycle)
3.13 (min)	0.130
3.5	0.0846
4.	0.106
5.	0.339
6.	0.646
7.	0.747
8.	0.832
9.	1.30
10.	4.35
10.06 (max)	4.85

$\Delta K$  (Ksi $\sqrt{\text{in}}$ )  $da/dN$  (10<sup>-6</sup>in/cycle)

RMS %  
Error  
22.26

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS %  
Error

Life Prediction Ratio Summary

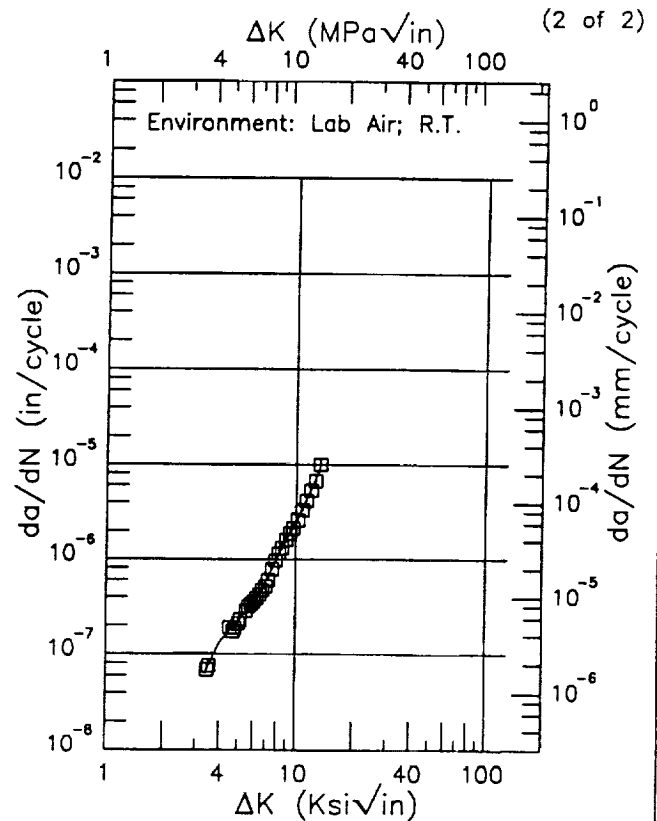
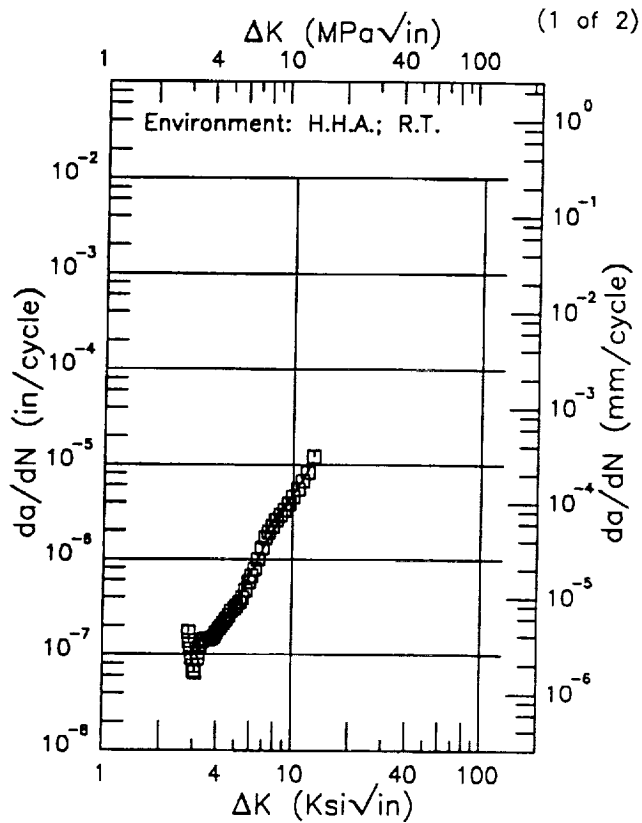
0. .5 .8 1.25 2.



E 8090

Condition/Ht: T8771  
 Form: 1.75 in. Plate  
 Specimen Type: CT  
 Orientation: L-T  
 Stress Ratio: 0.33  
 Frequency: 15 Hz

Yield Strength: 68 ksi  
 Ult. Strength: 77 ksi  
 Specimen Thk: 0.248 in.  
 Specimen Width: 2.003 - 2.004 in.  
 Ref: WLX01



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
2.82 (min)	0.104
3.	0.103
3.5	0.120
4.	0.160
5.	0.335
6.	0.694
7.	1.31
8.	2.20
9.	3.34
10.	4.76
12.74 (max)	10.8

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
3.43 (min)	0.0675
3.5	0.0751
4.	0.132
5.	0.222
6.	0.336
7.	0.580
8.	1.01
9.	1.62
10.	2.45
13.	8.19
13.36 (max)	9.75

RMS %  
 Error  
 16.39

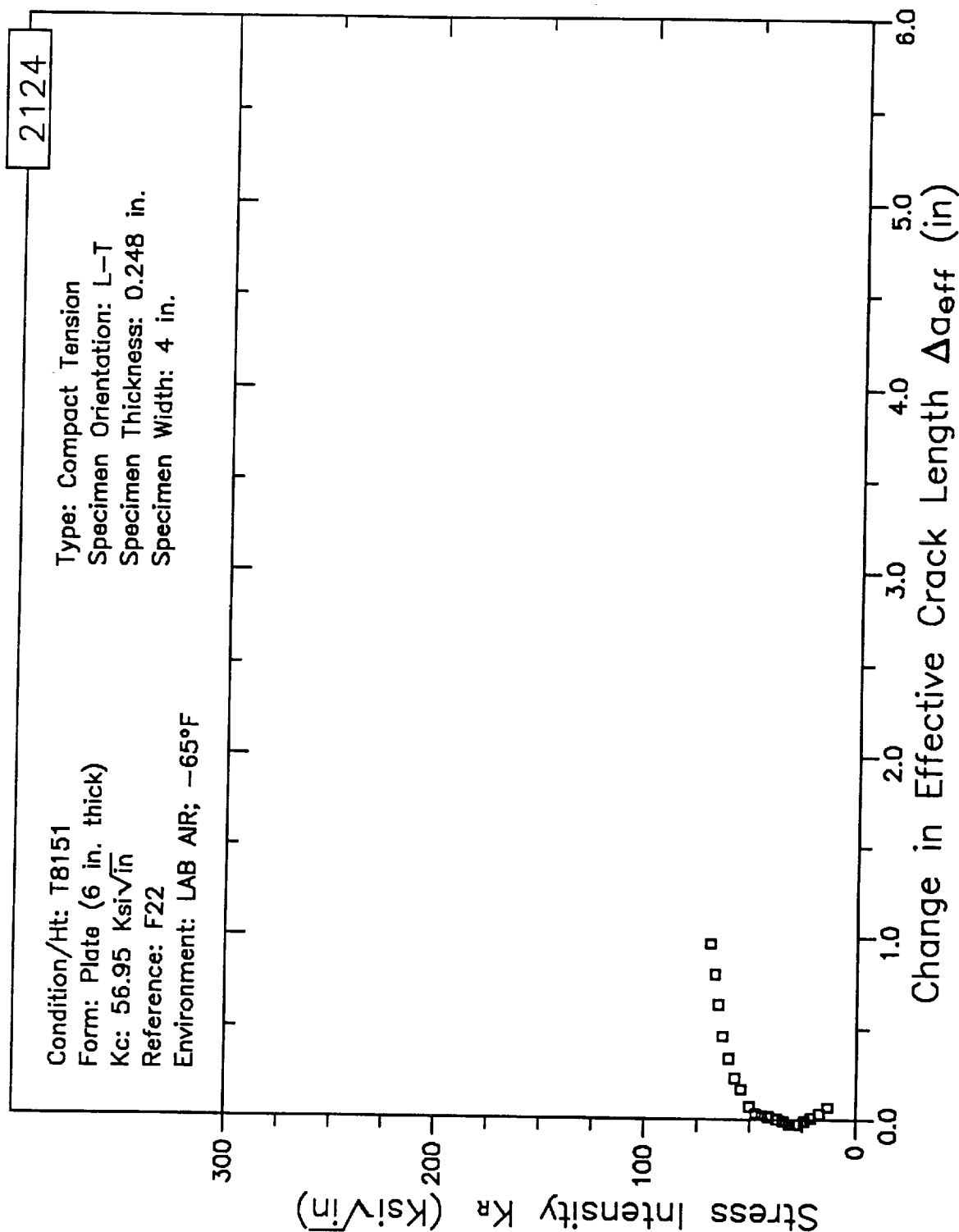
Life Prediction Ratio Summary  
  
 0. .5 .8 1.25 2.

RMS %  
 Error  
 5.28

Life Prediction Ratio Summary  
  
 0. .5 .8 1.25 2.

C1-34

# RESISTANCE CURVE



PAGE C1-34 INTENTIONALLY BLANK G2-1

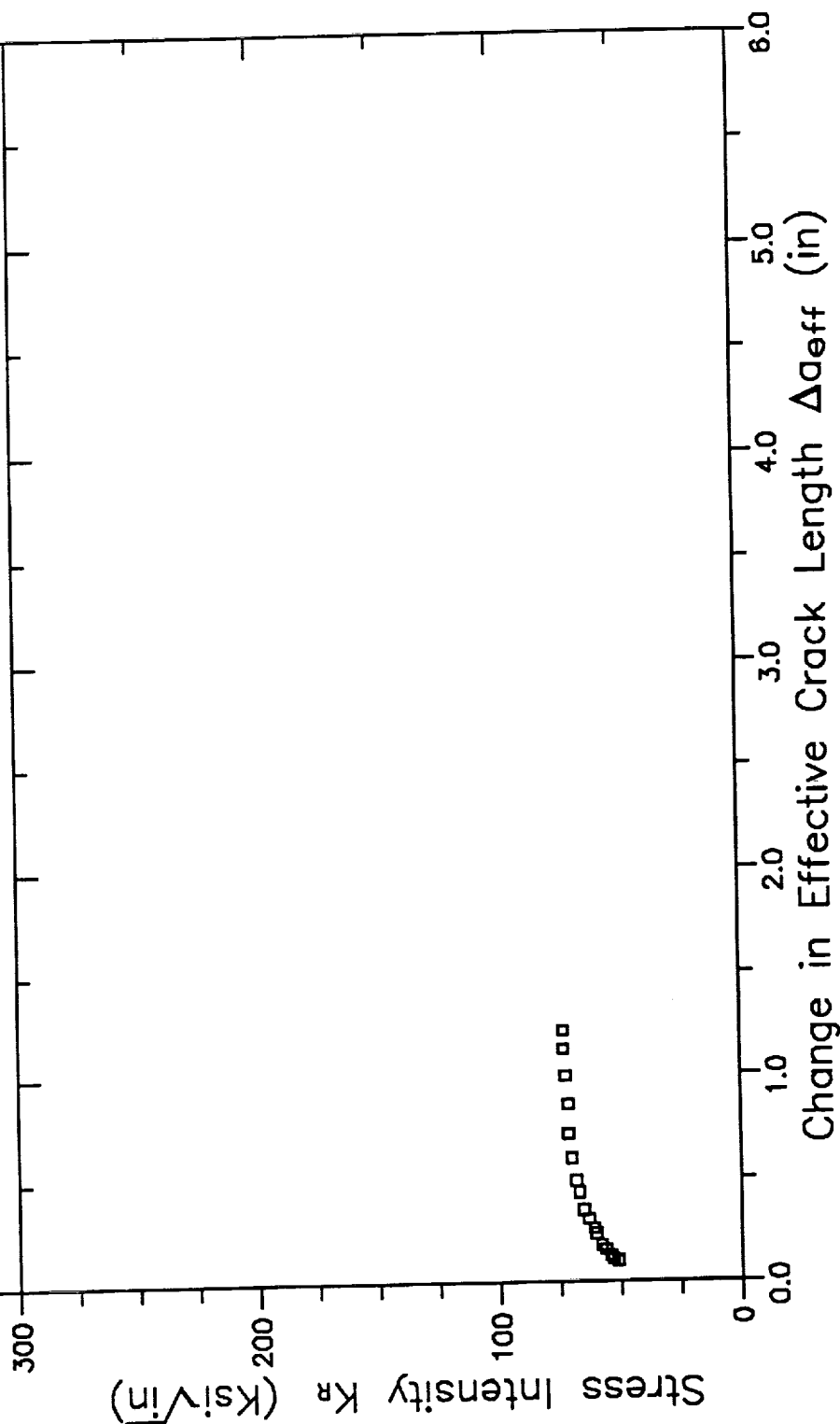
PREVIOUS PAGE BLANK NOT FILMED

# RESISTANCE CURVE

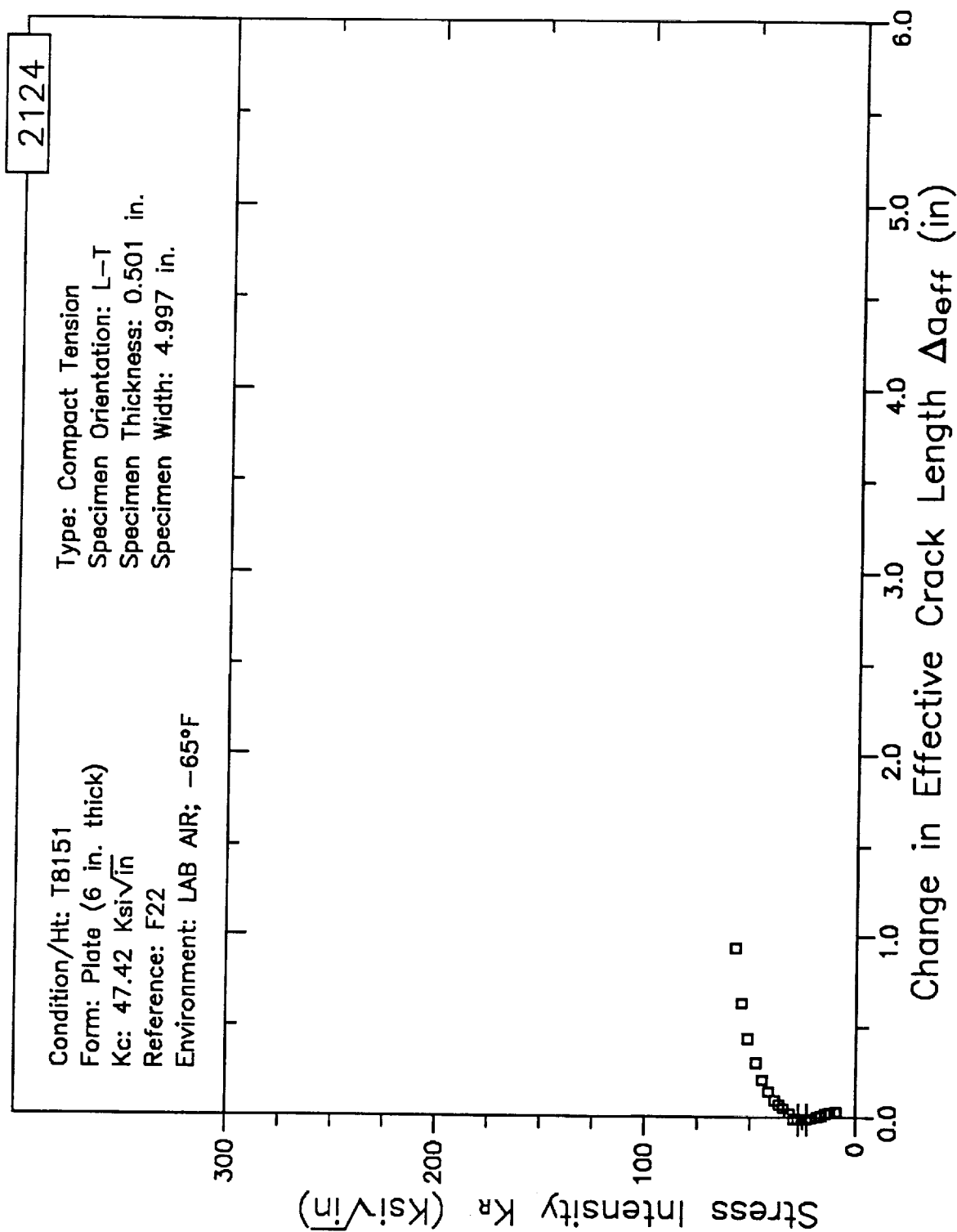
2124

Condition/Ht: TB151  
Form: Plate (6 in. thick)  
Kc: 6480 Ksi $\sqrt{\text{in}}$   
Reference: F22  
Environment: LAB AIR; -65°F

Type: Compact Tension  
Specimen Orientation: L-T  
Specimen Thickness: 0.248 in.  
Specimen Width: 5.998 in.



# RESISTANCE CURVE

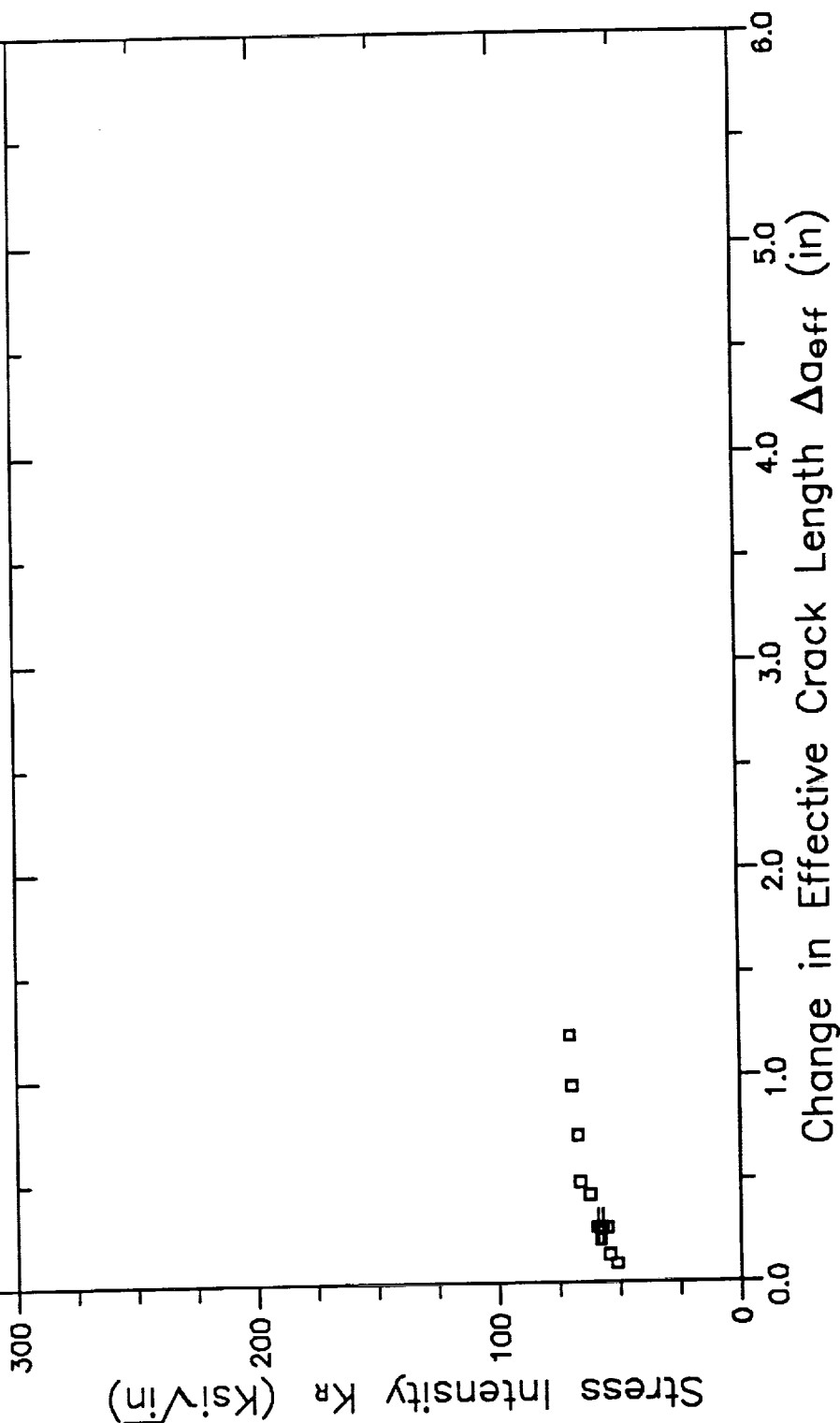


# RESISTANCE CURVE

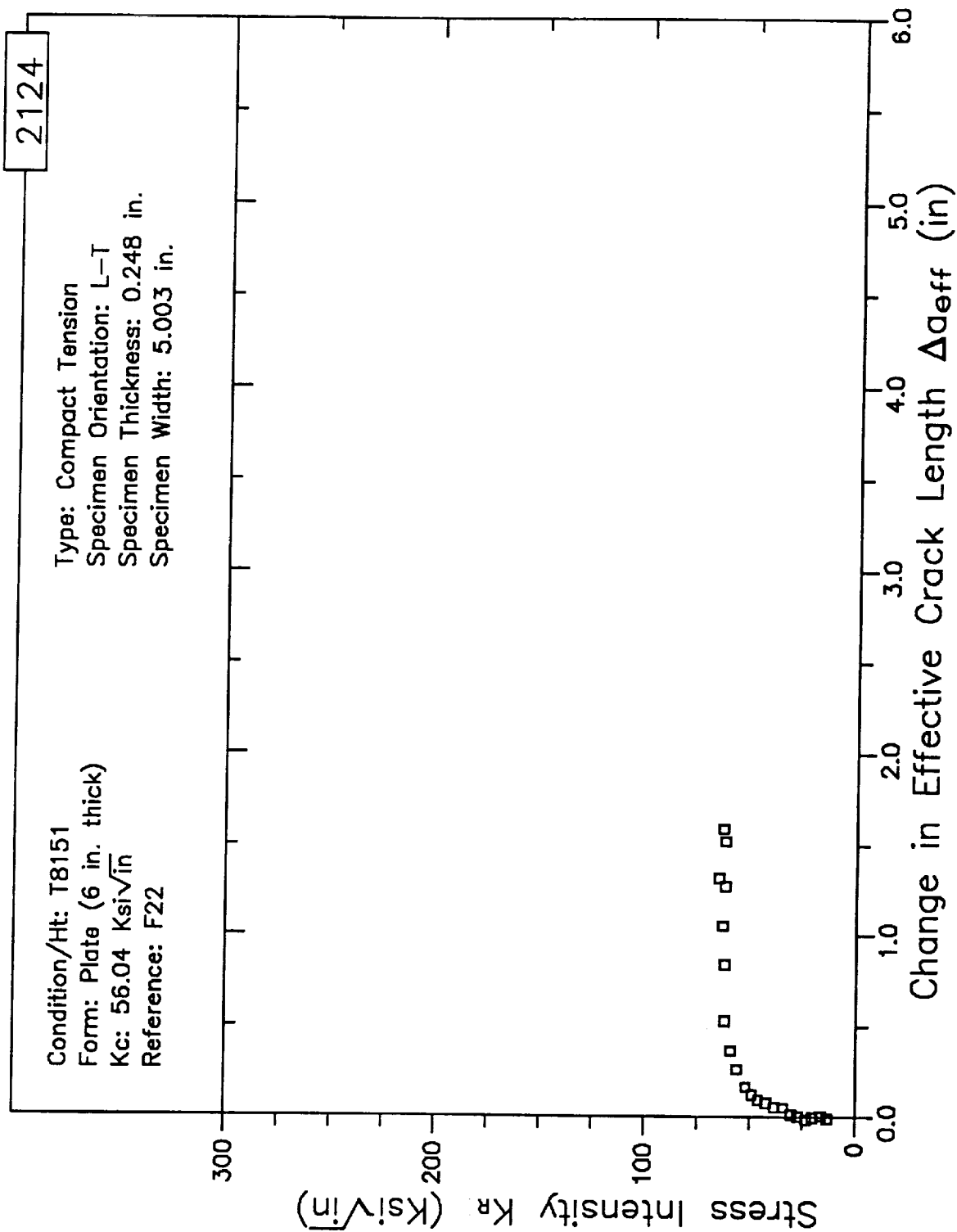
2124

Condition/Ht: T8151  
Form: Plate (6 in. thick)  
Kc: 57.69 Ksi $\sqrt{\text{in}}$   
Reference: F22

Type: Compact Tension  
Specimen Orientation: L-T  
Specimen Thickness: 0.246 in.  
Specimen Width: 5.996 in.



# RESISTANCE CURVE

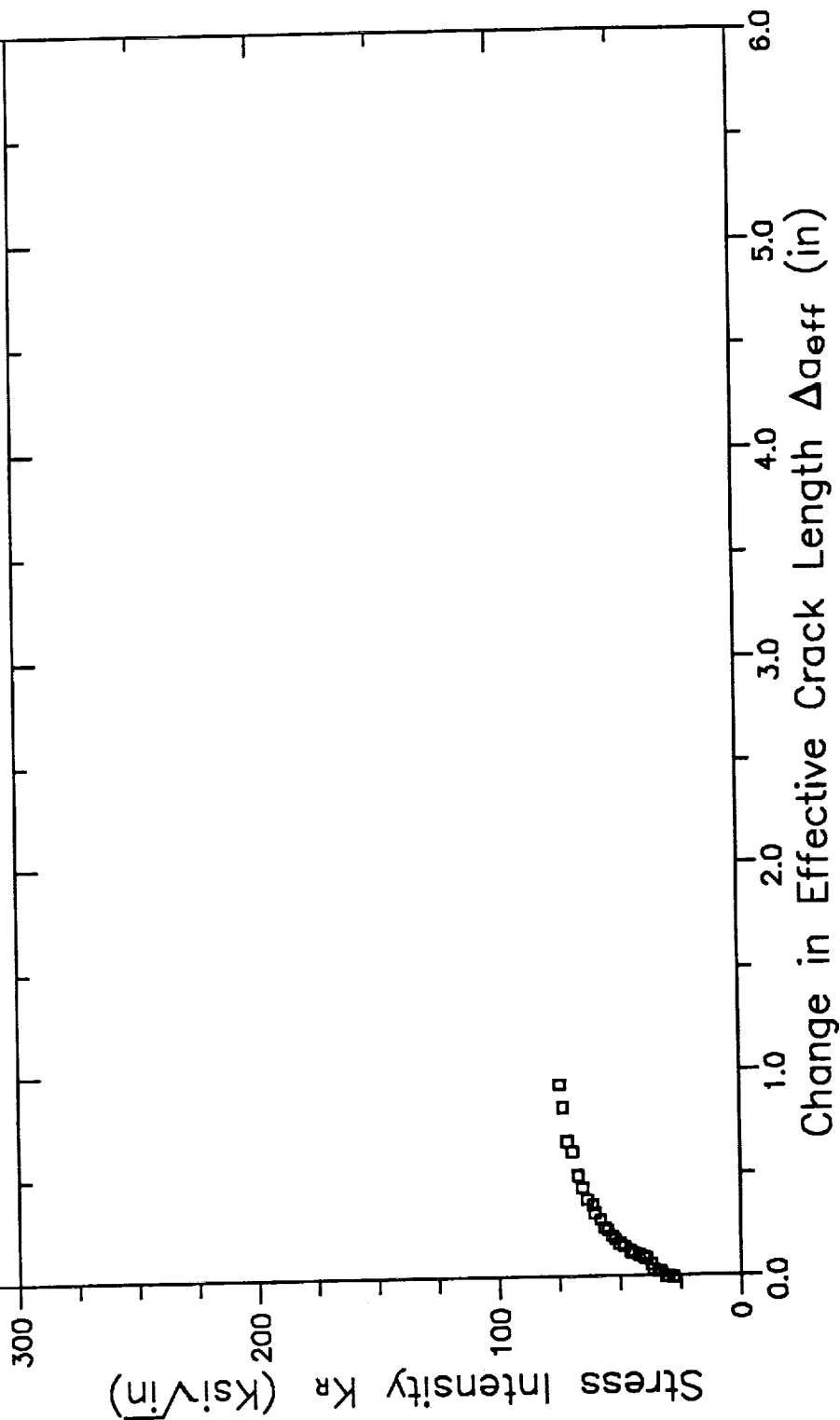


# RESISTANCE CURVE

2124

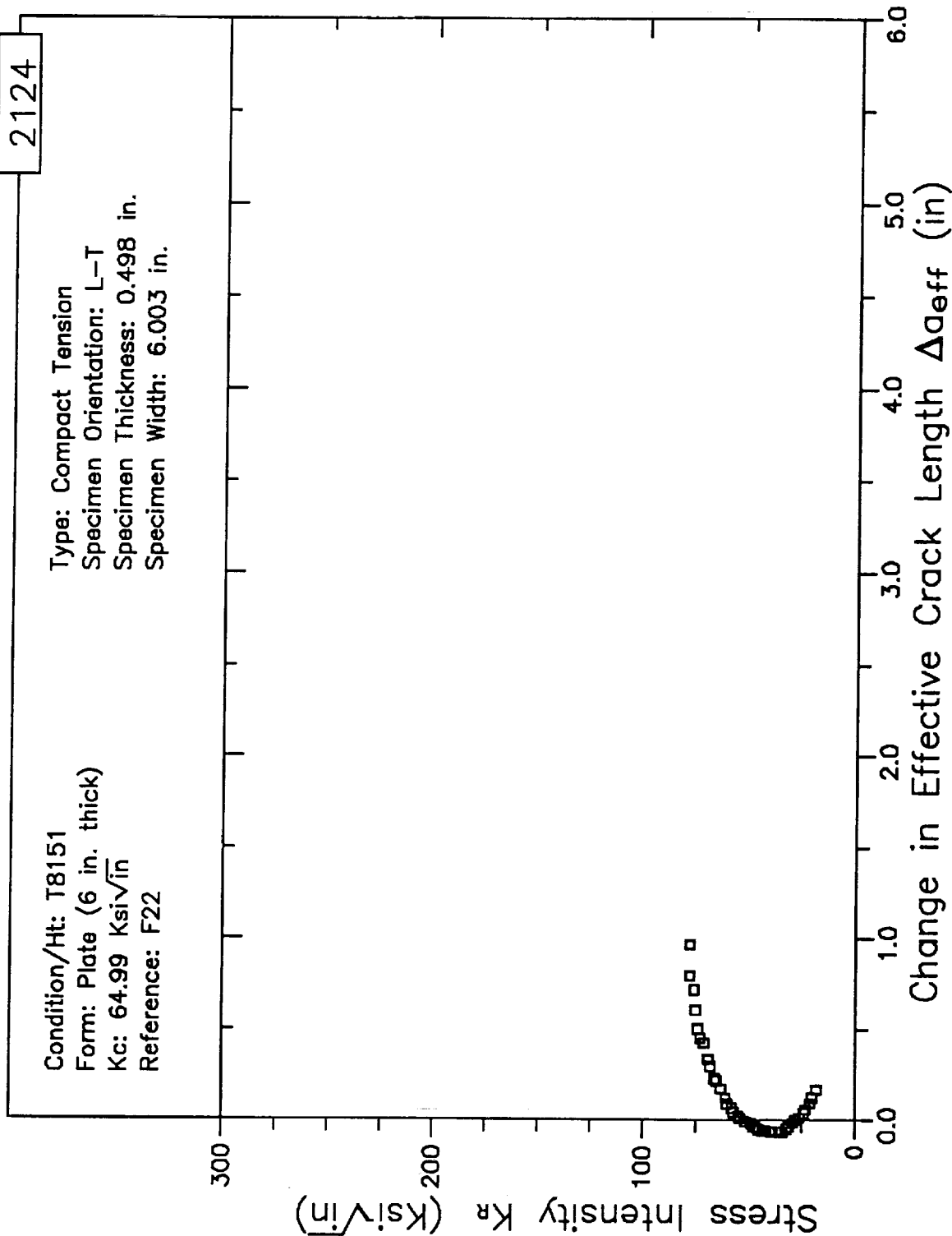
Condition/Ht: T8151  
Form: Plate (6 in. thick)  
Kc: 63.39 Ksi√in  
Reference: F22

Type: Compact Tension  
Specimen Orientation: L-T  
Specimen Thickness: 0.483 in.  
Specimen Width: 5.982 in.





# RESISTANCE CURVE

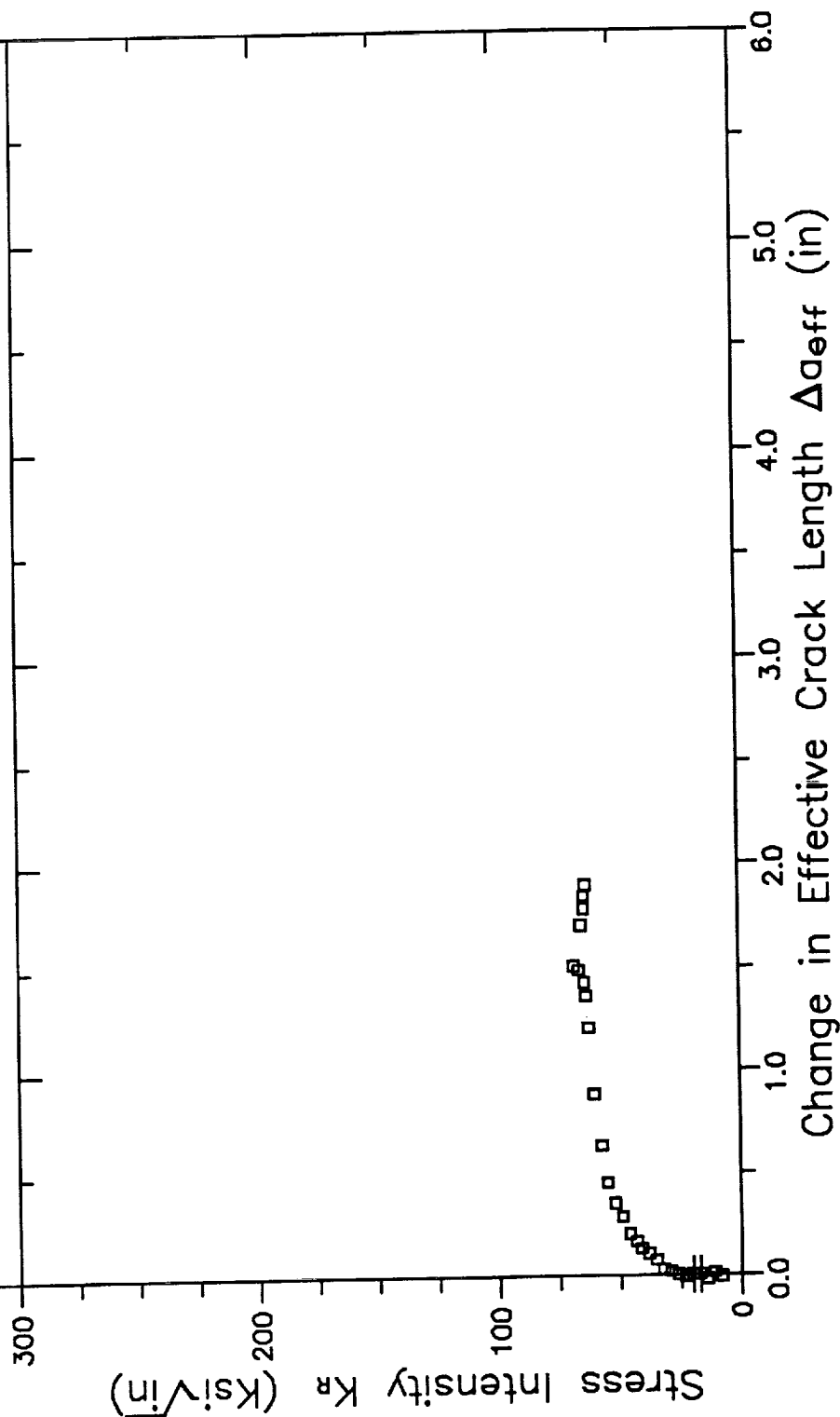


# RESISTANCE CURVE

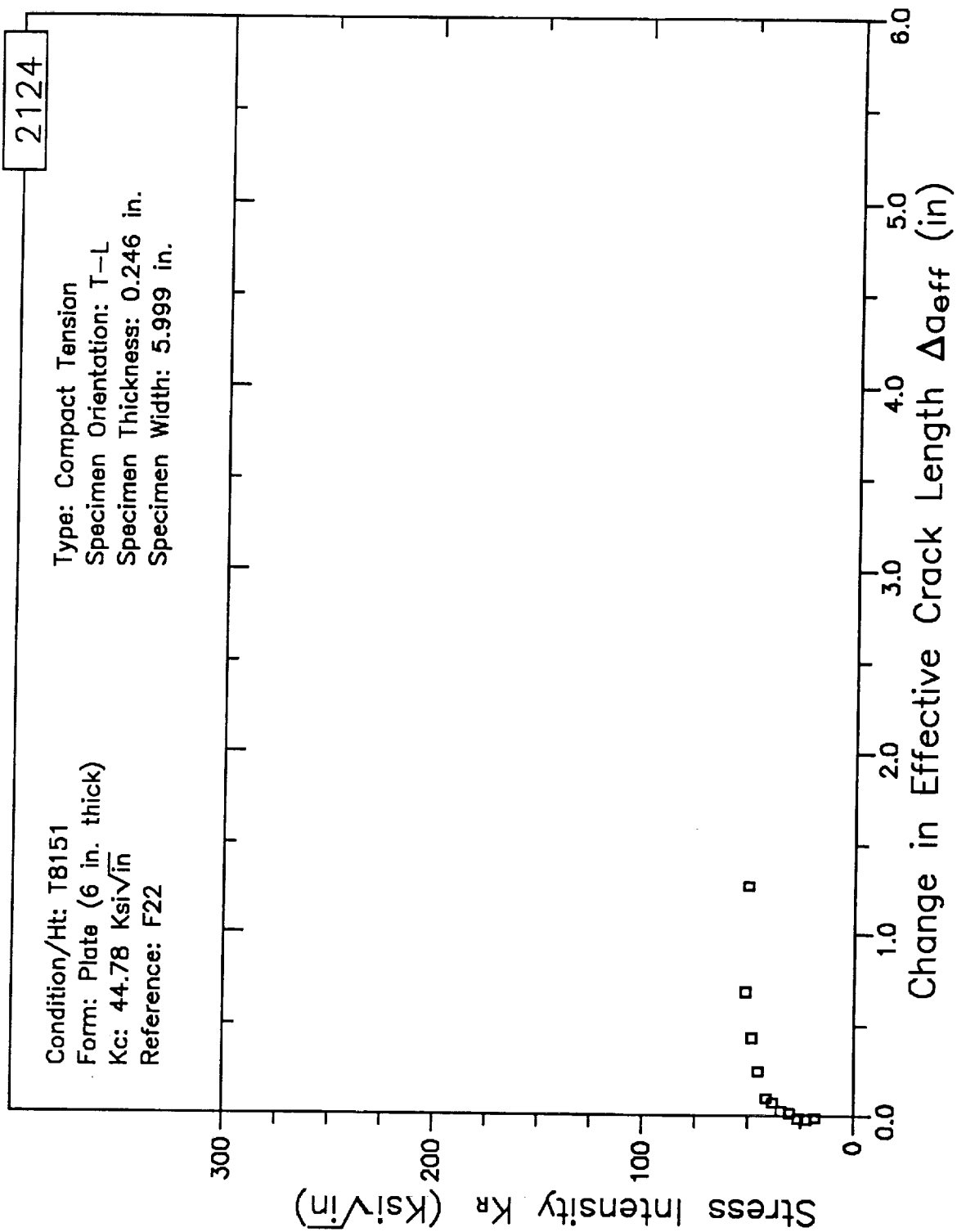
2124

Condition/Ht: T8151  
Form: Plate (6 in. thick)  
Kc: 51.89 Ksi√in  
Reference: F22

Type: Compact Tension  
Specimen Orientation: L-T  
Specimen Thickness: 0.499 in.  
Specimen Width: 4.998 in.



# RESISTANCE CURVE

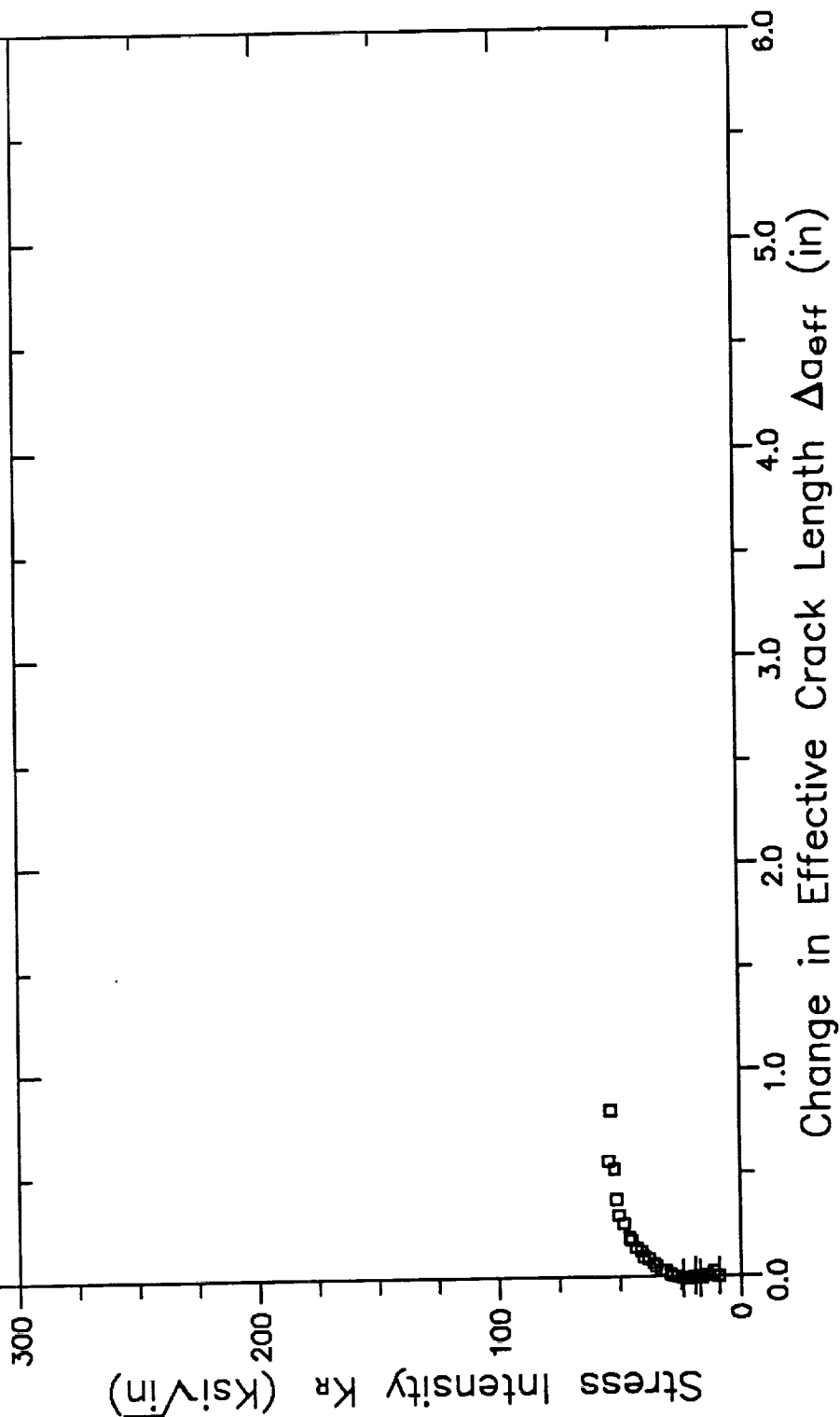


# RESISTANCE CURVE

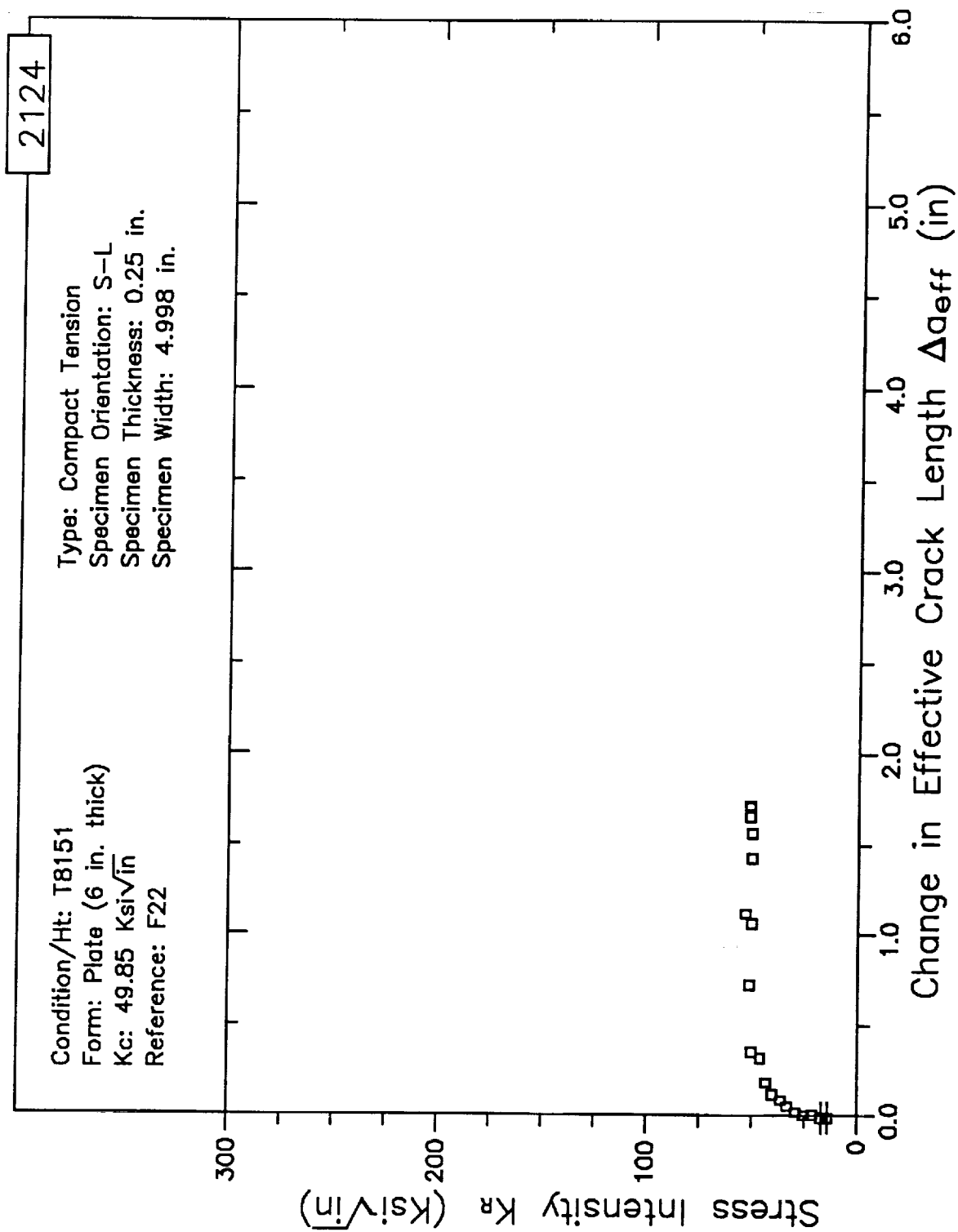
2124

Condition/Ht: T8151  
Form: Plate (6 in. thick)  
Kc: 46.36 Ksi√in  
Reference: F22

Type: Compact Tension  
Specimen Orientation: T-L  
Specimen Thickness: 0.248 in.  
Specimen Width: 5.003 in.



# RESISTANCE CURVE

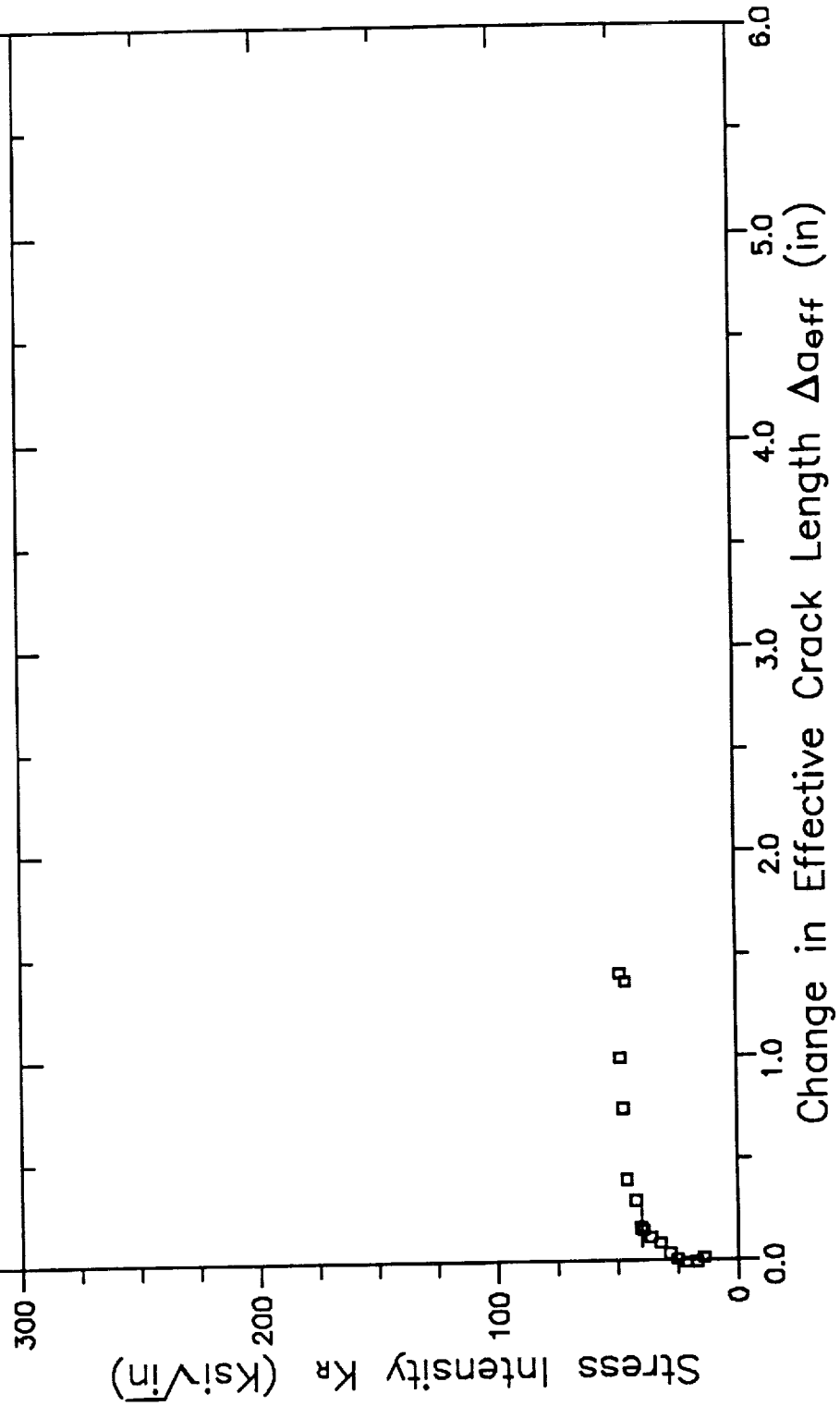


# RESISTANCE CURVE

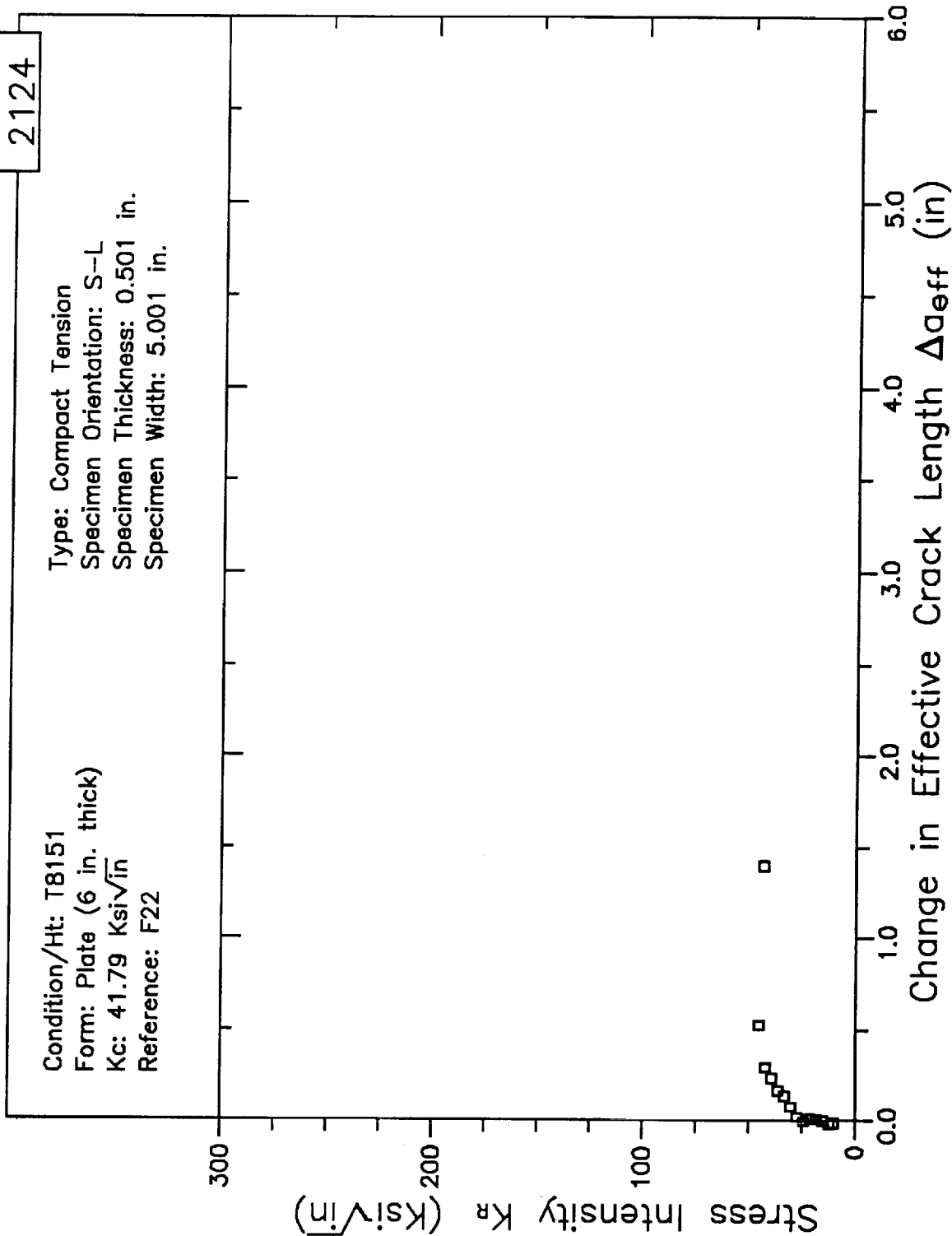
2124

Condition/Ht: T8151  
Form: Plate (6 in. thick)  
Kc: 40.39 Ksi $\sqrt{\text{in}}$   
Reference: F22

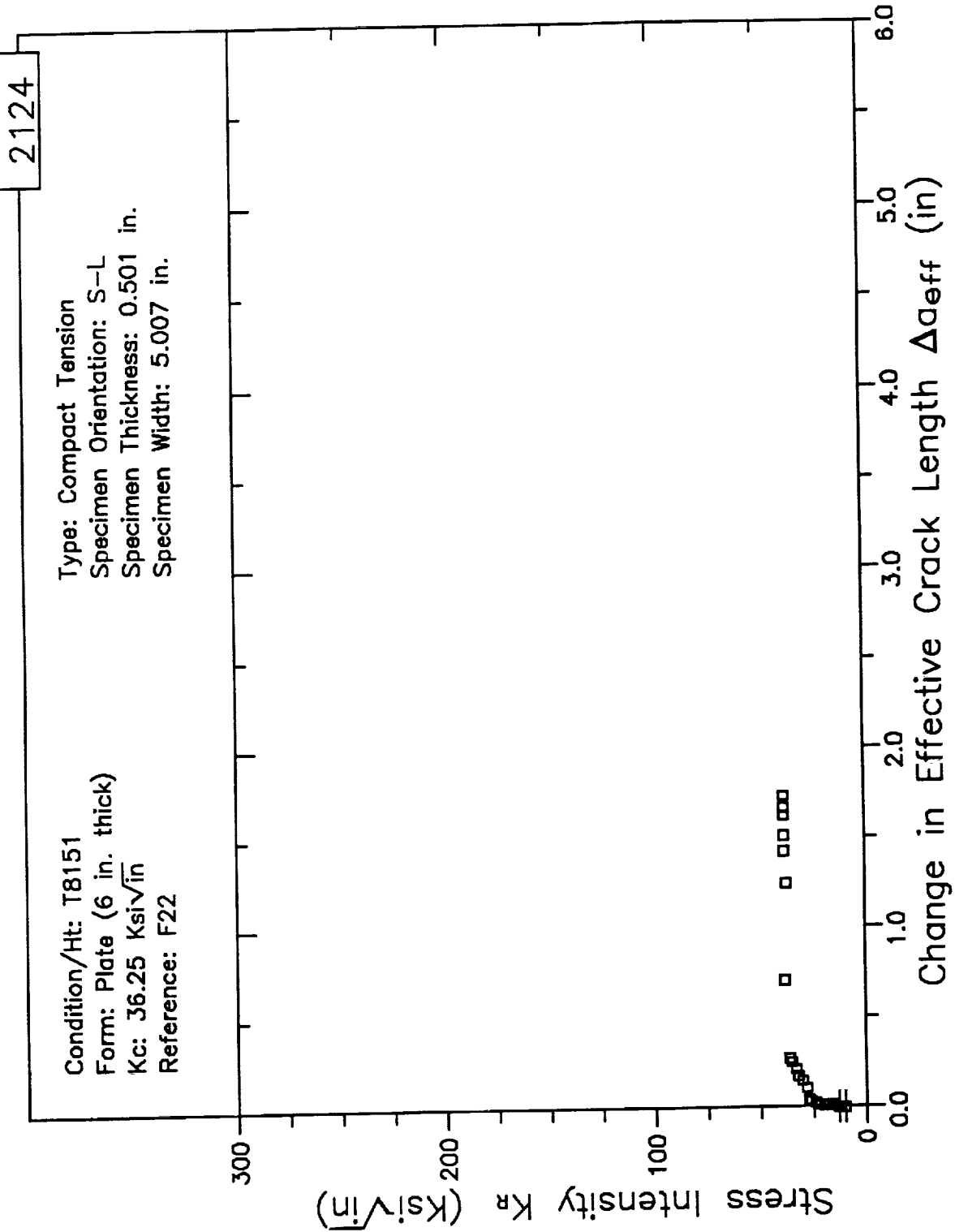
Type: Compact Tension  
Specimen Orientation: S-L  
Specimen Thickness: 0.25 in.  
Specimen Width: 5.001 in.



# RESISTANCE CURVE

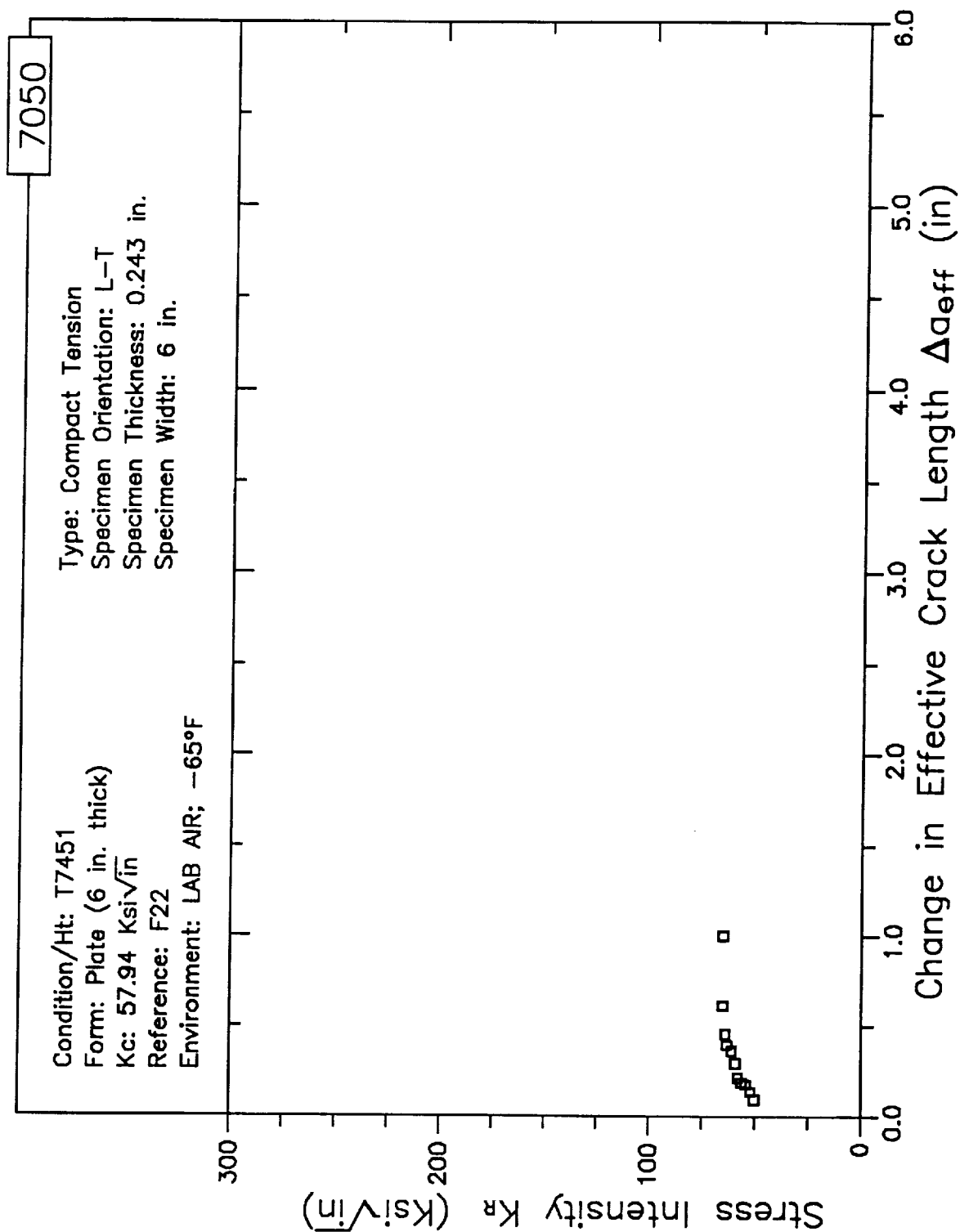


# RESISTANCE CURVE

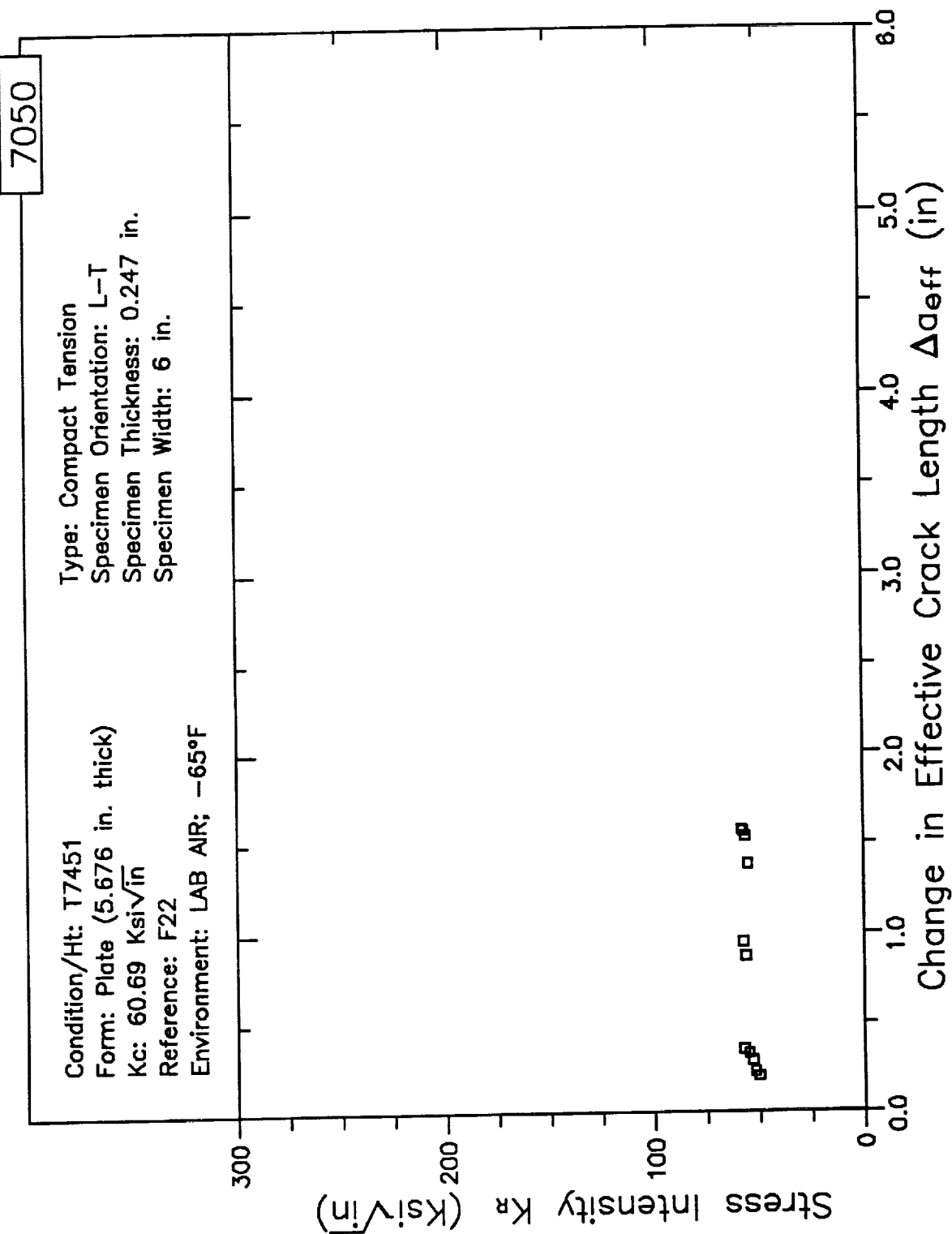




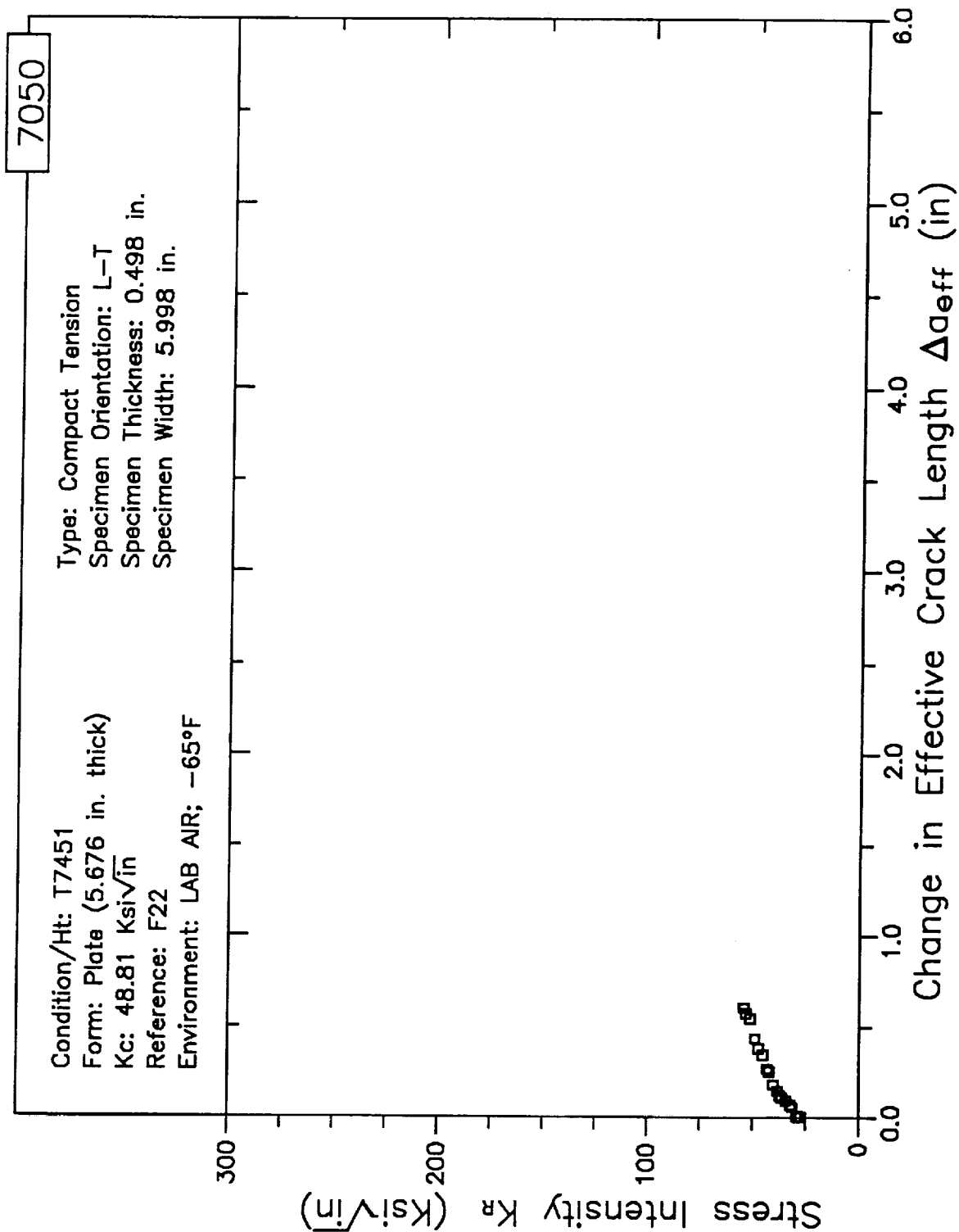
# RESISTANCE CURVE



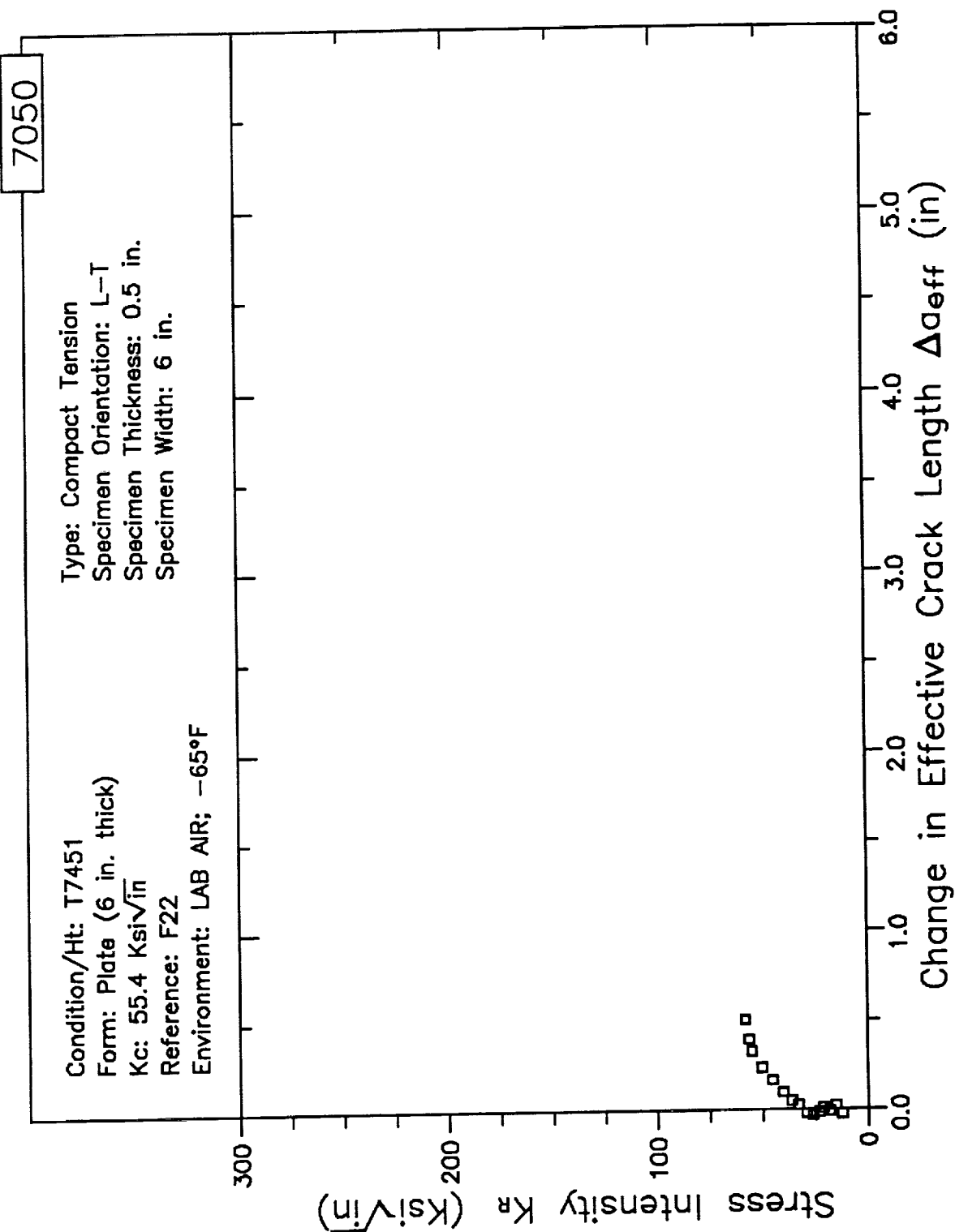
# RESISTANCE CURVE



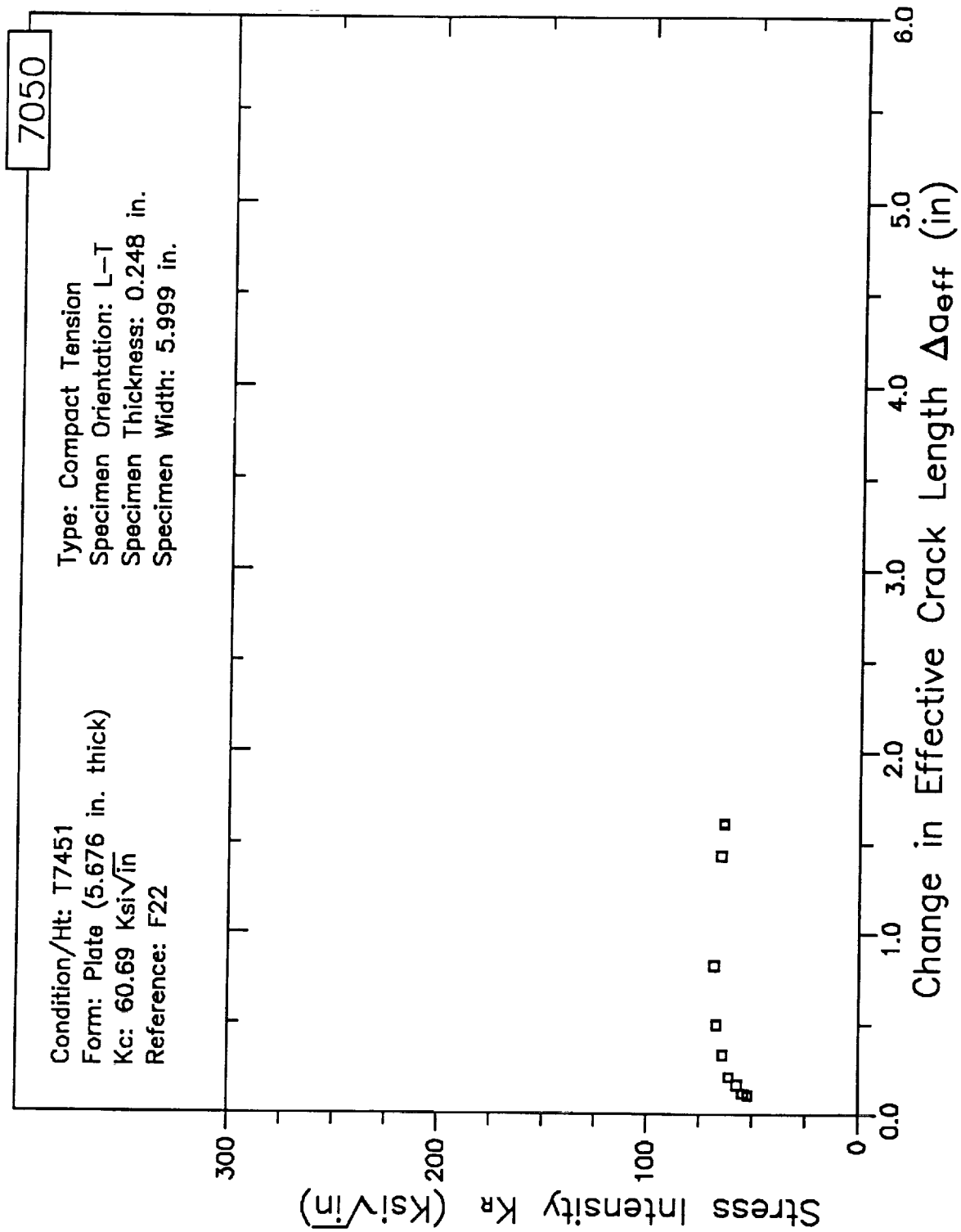
# RESISTANCE CURVE



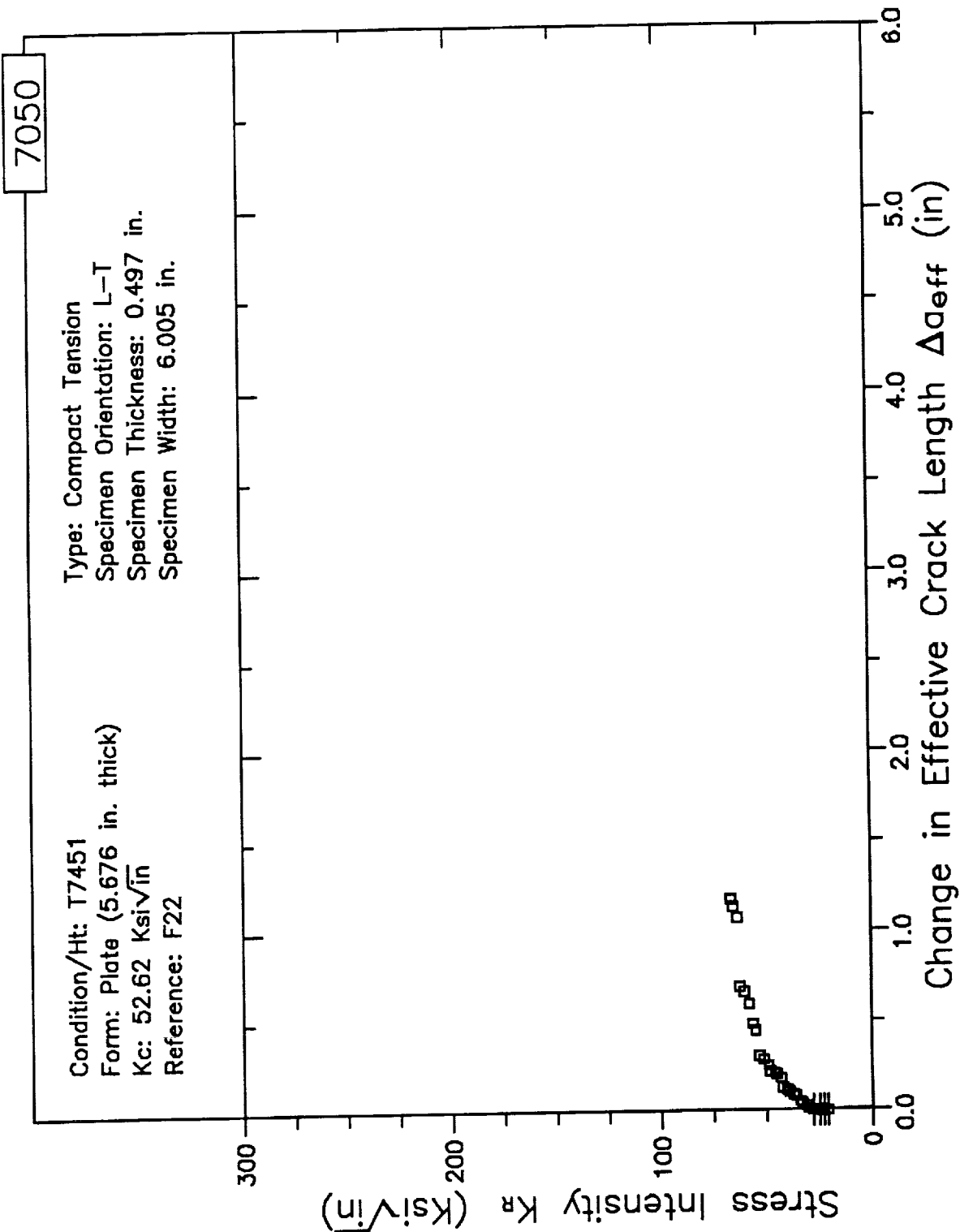
# RESISTANCE CURVE



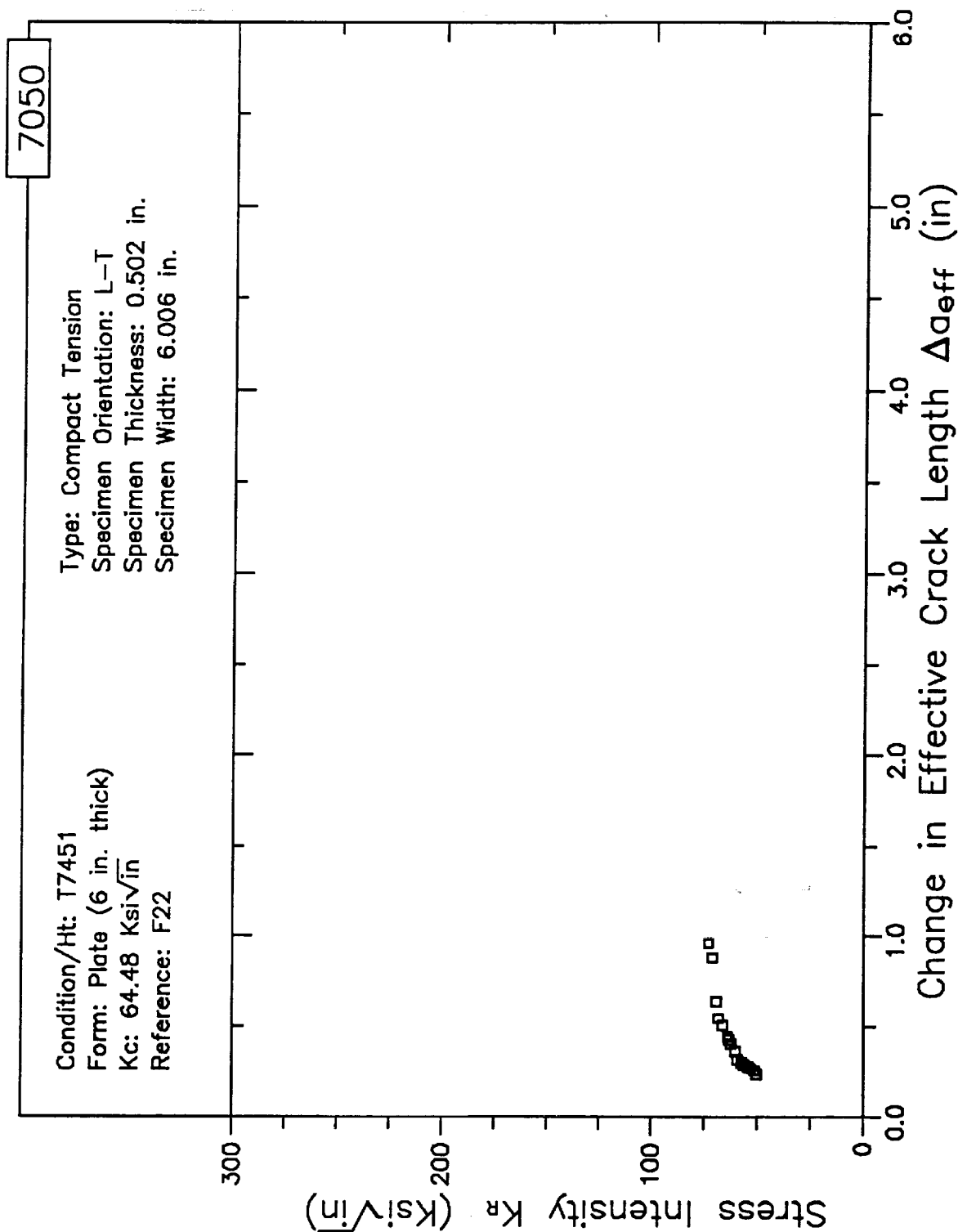
# RESISTANCE CURVE



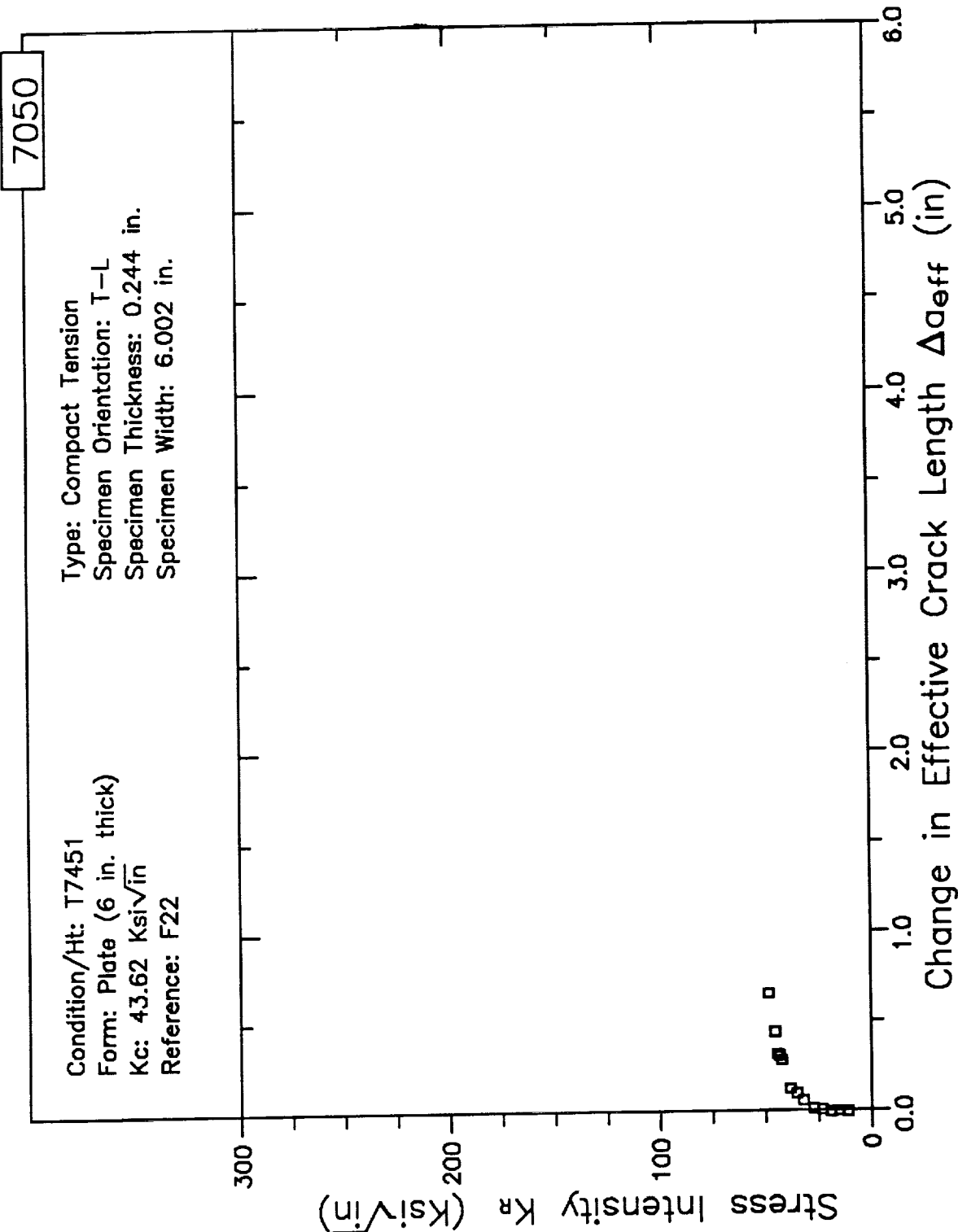
# RESISTANCE CURVE



# RESISTANCE CURVE

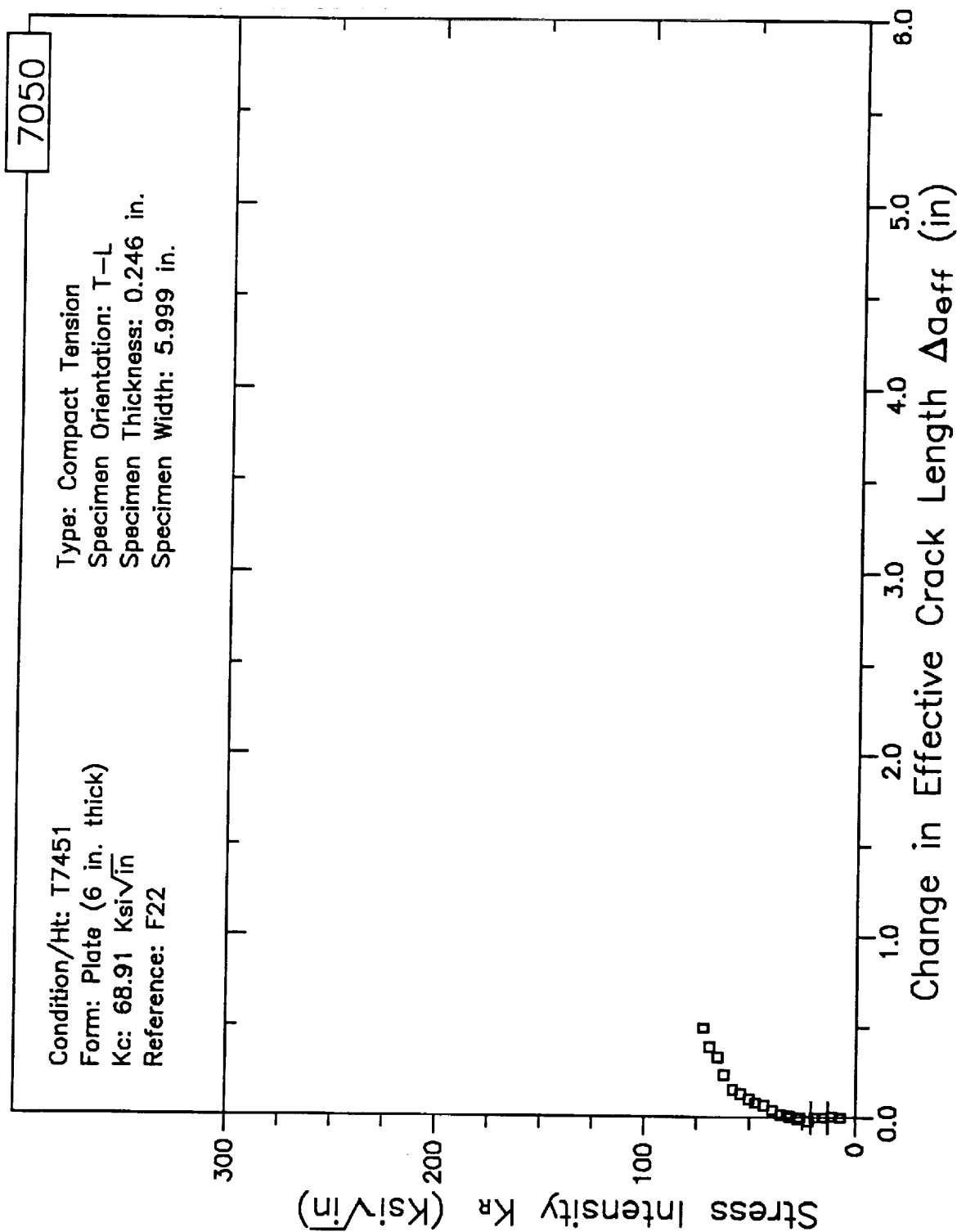


# RESISTANCE CURVE

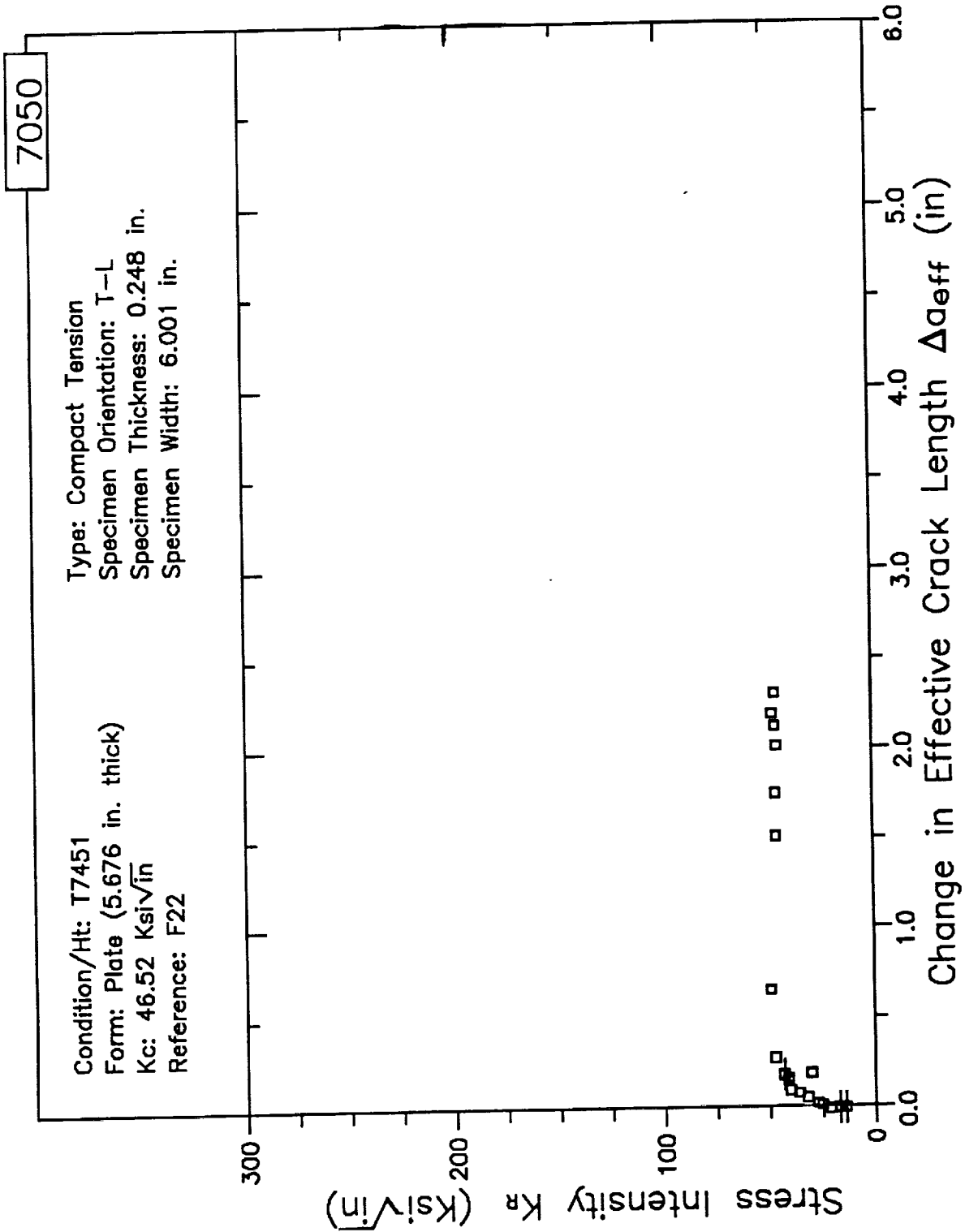




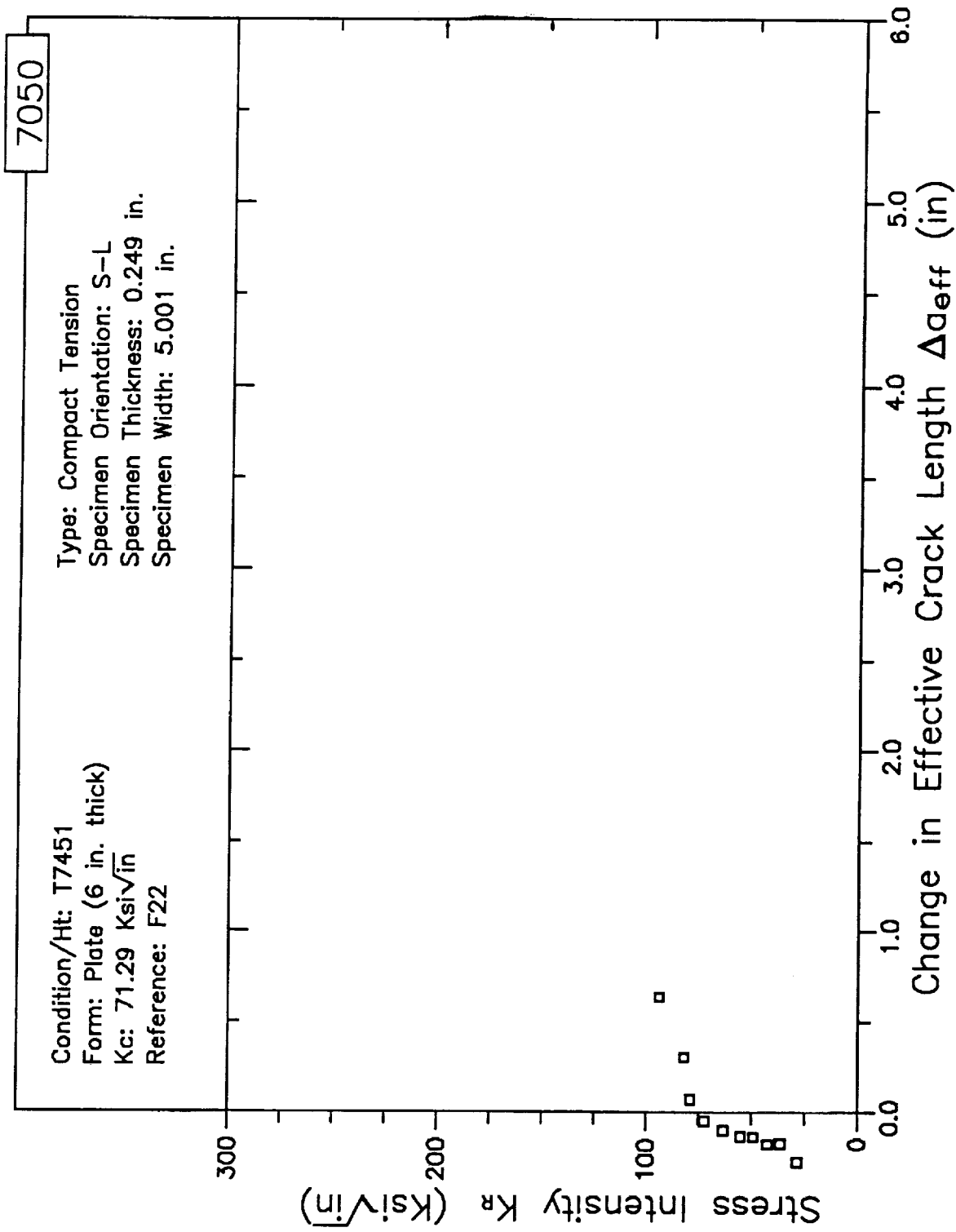
# RESISTANCE CURVE



# RESISTANCE CURVE



# RESISTANCE CURVE

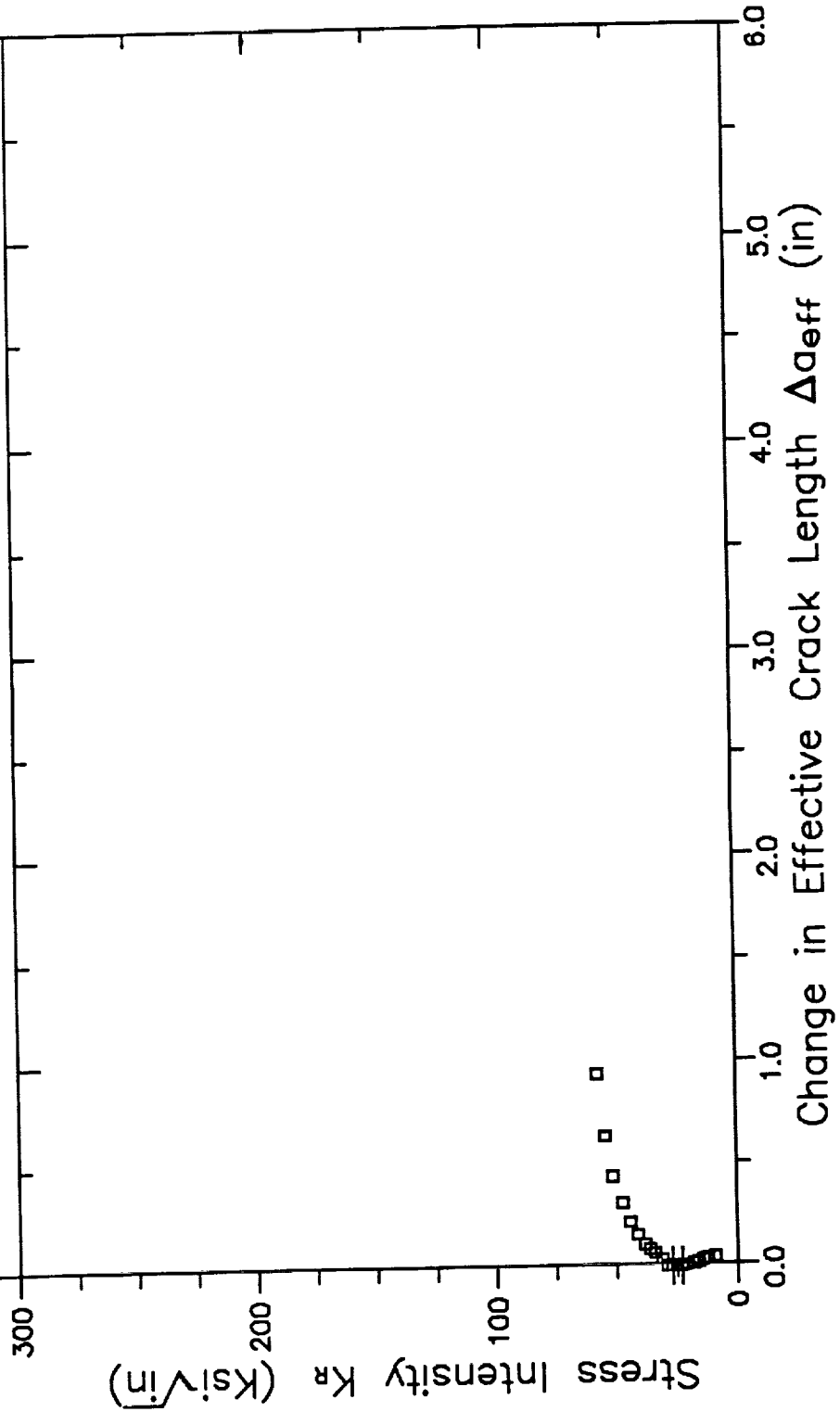


# RESISTANCE CURVE

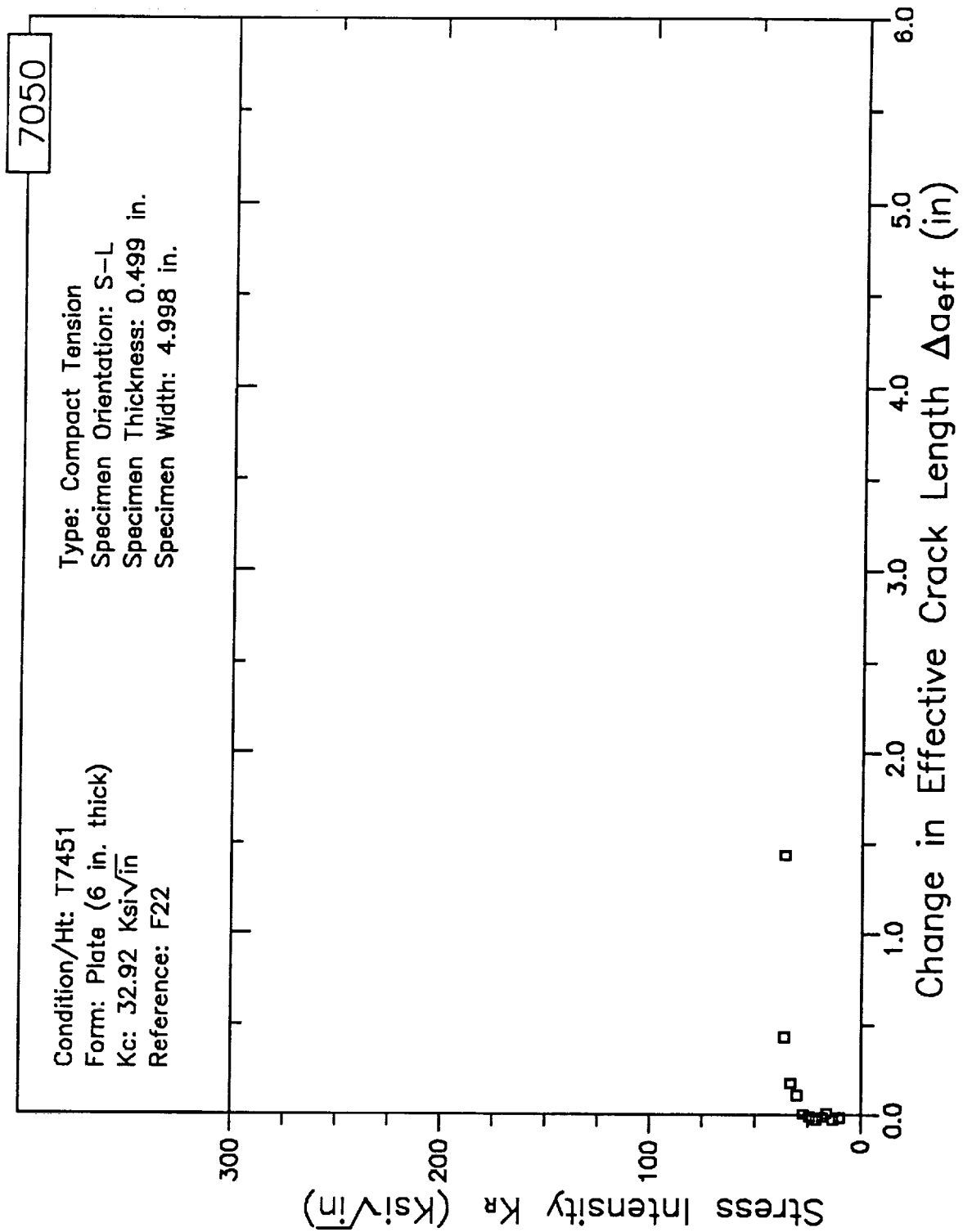
7050

Condition/Ht: T7451  
Form: Plate (5.676 in. thick)  
Kc: 47.42 Ksi√in  
Reference: F22

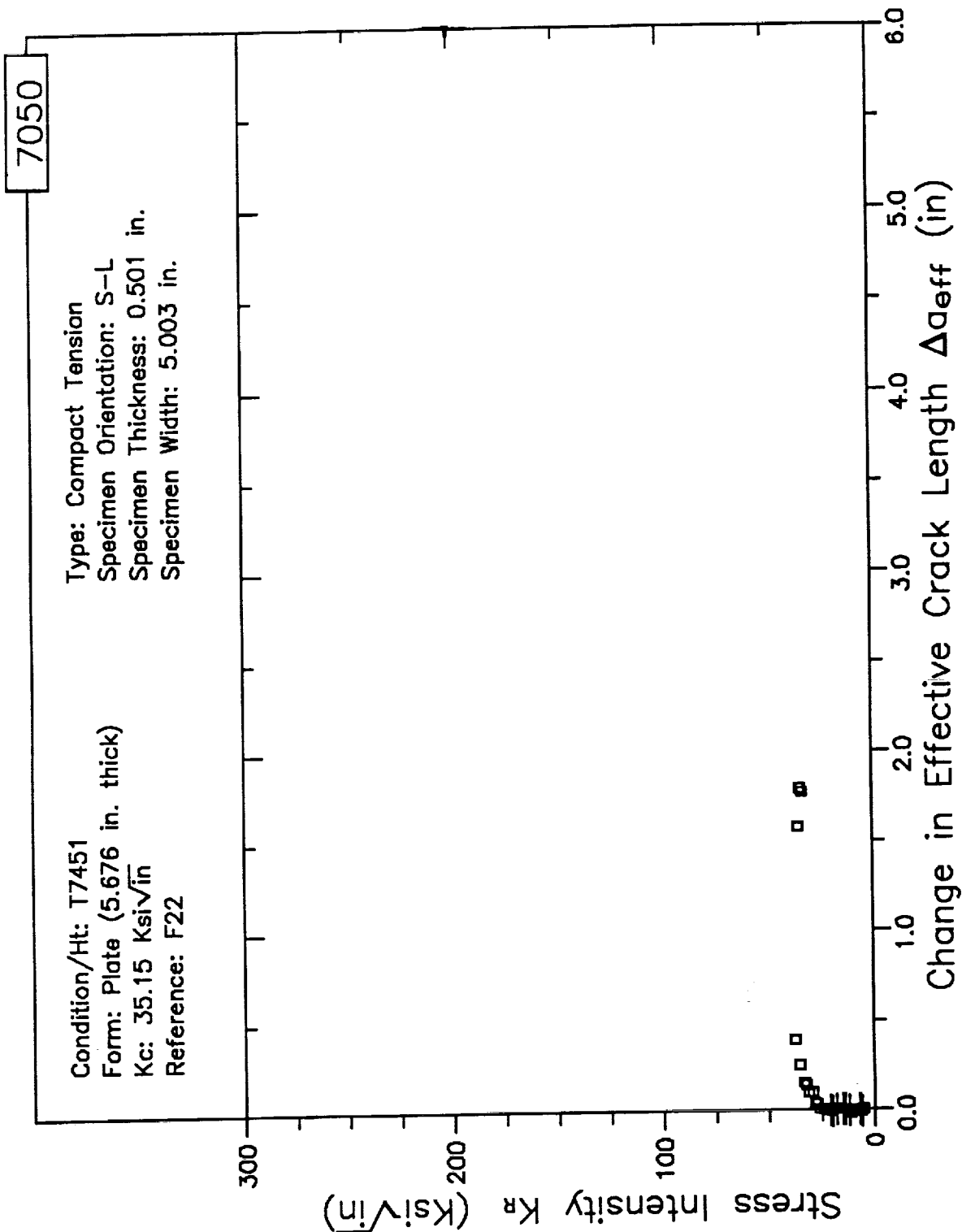
Type: Compact Tension  
Specimen Orientation: S-L  
Specimen Thickness: 0.25 in.  
Specimen Width: 5 in.



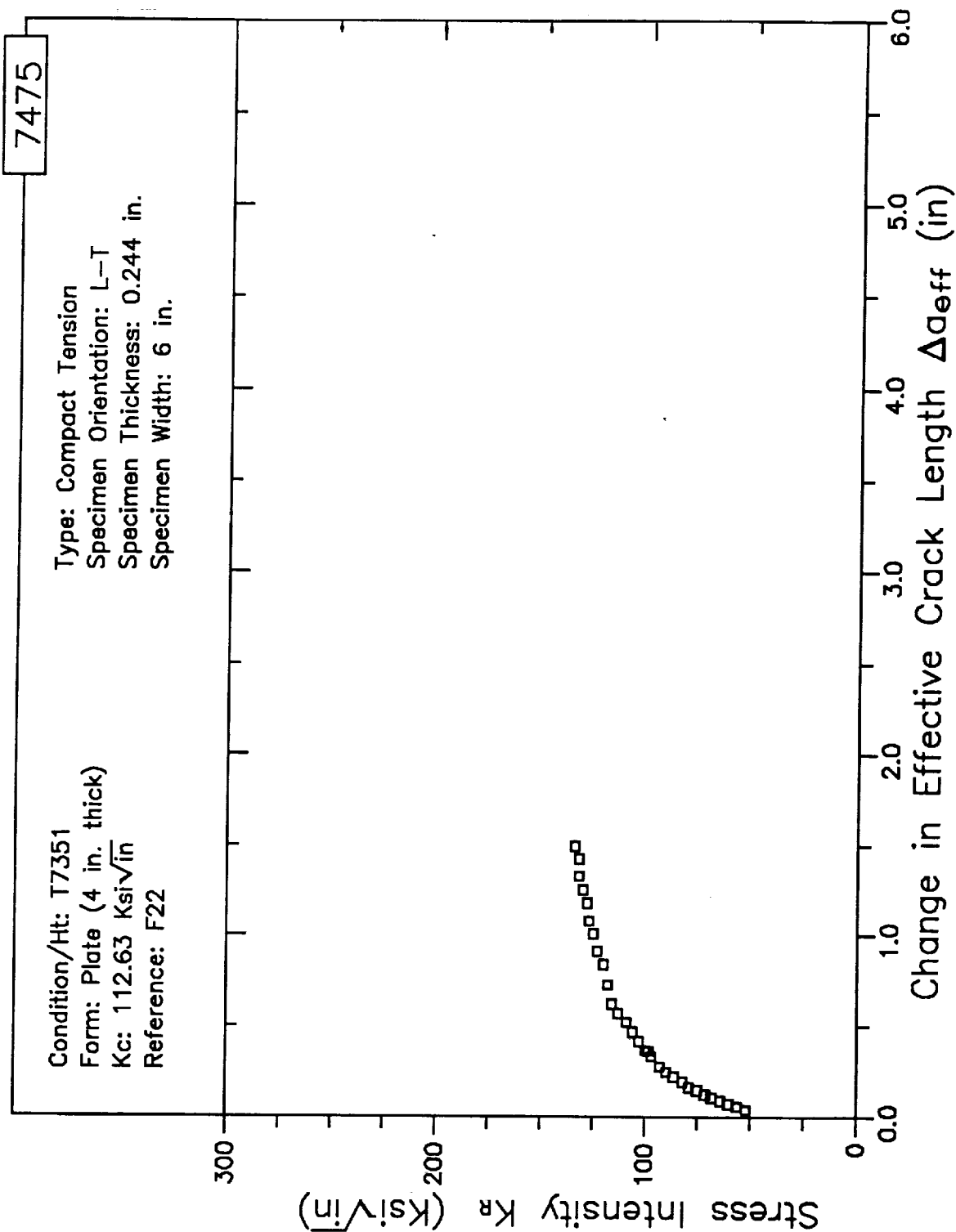
# RESISTANCE CURVE



# RESISTANCE CURVE



# RESISTANCE CURVE

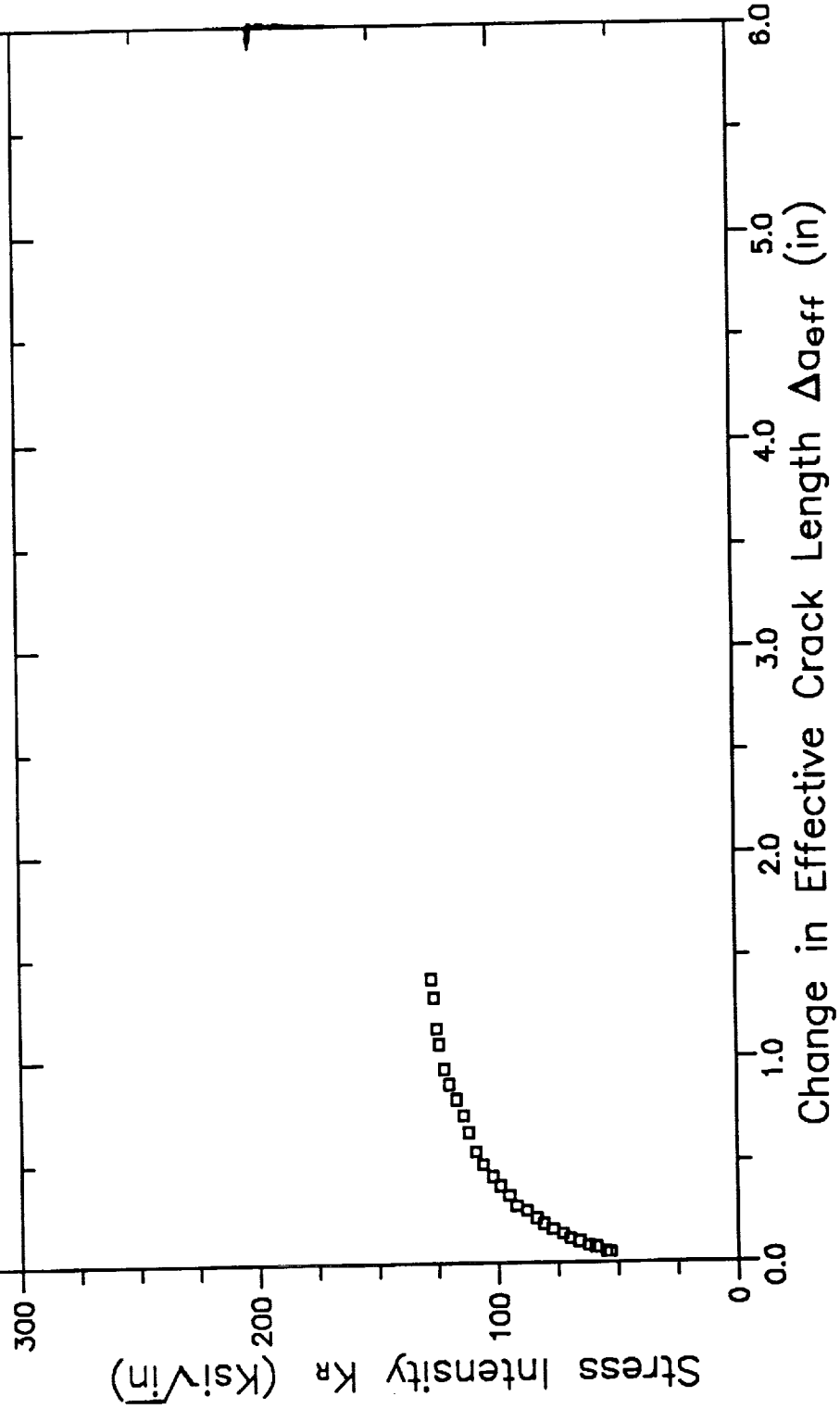


# RESISTANCE CURVE

7475

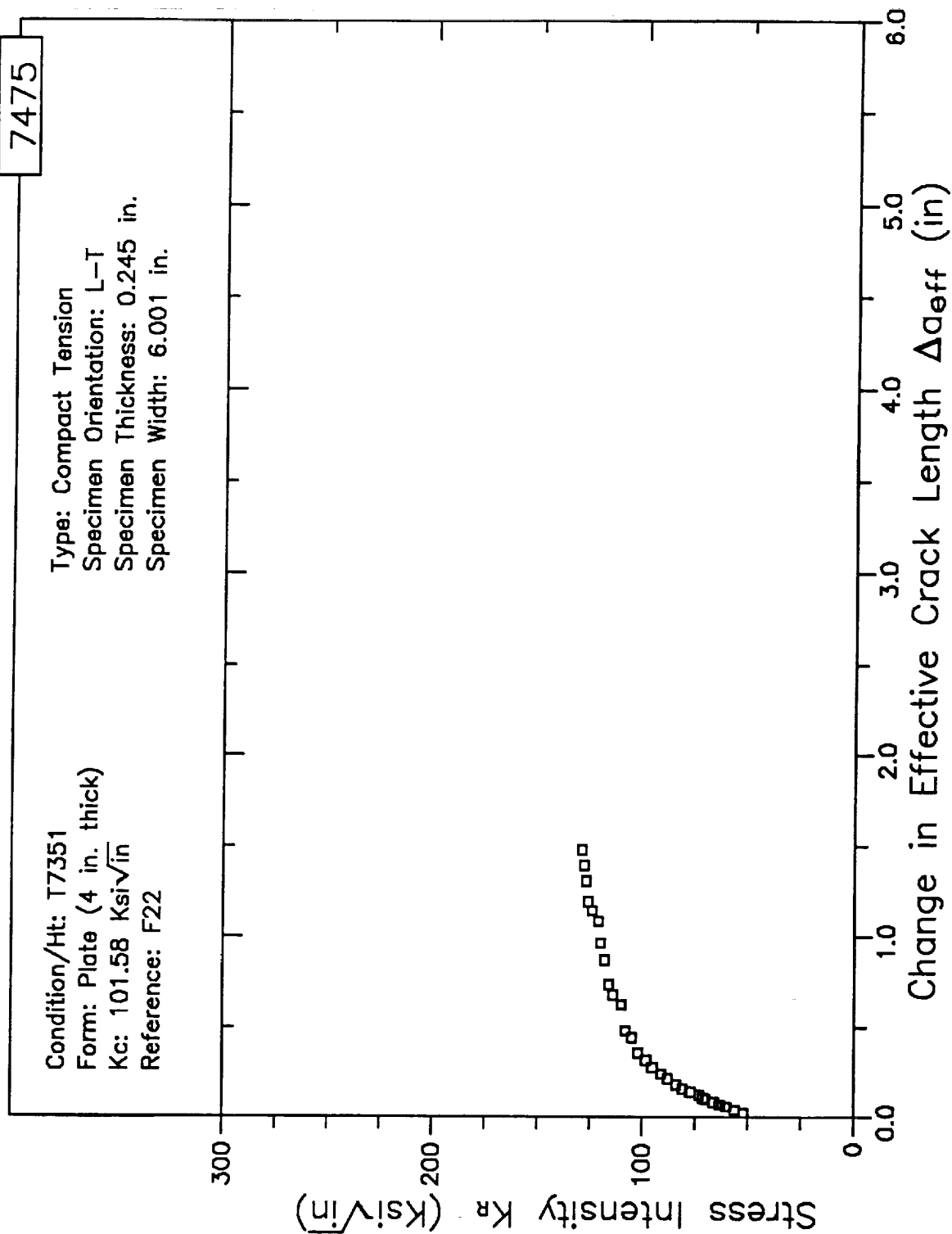
Condition/Ht: T7351  
Form: Plate (4 in. thick)  
Kc: 102.38 Ksi $\sqrt{\text{in}}$   
Reference: F22

Type: Compact Tension  
Specimen Orientation: L-T  
Specimen Thickness: 0.245 in.  
Specimen Width: 6 in.





# RESISTANCE CURVE

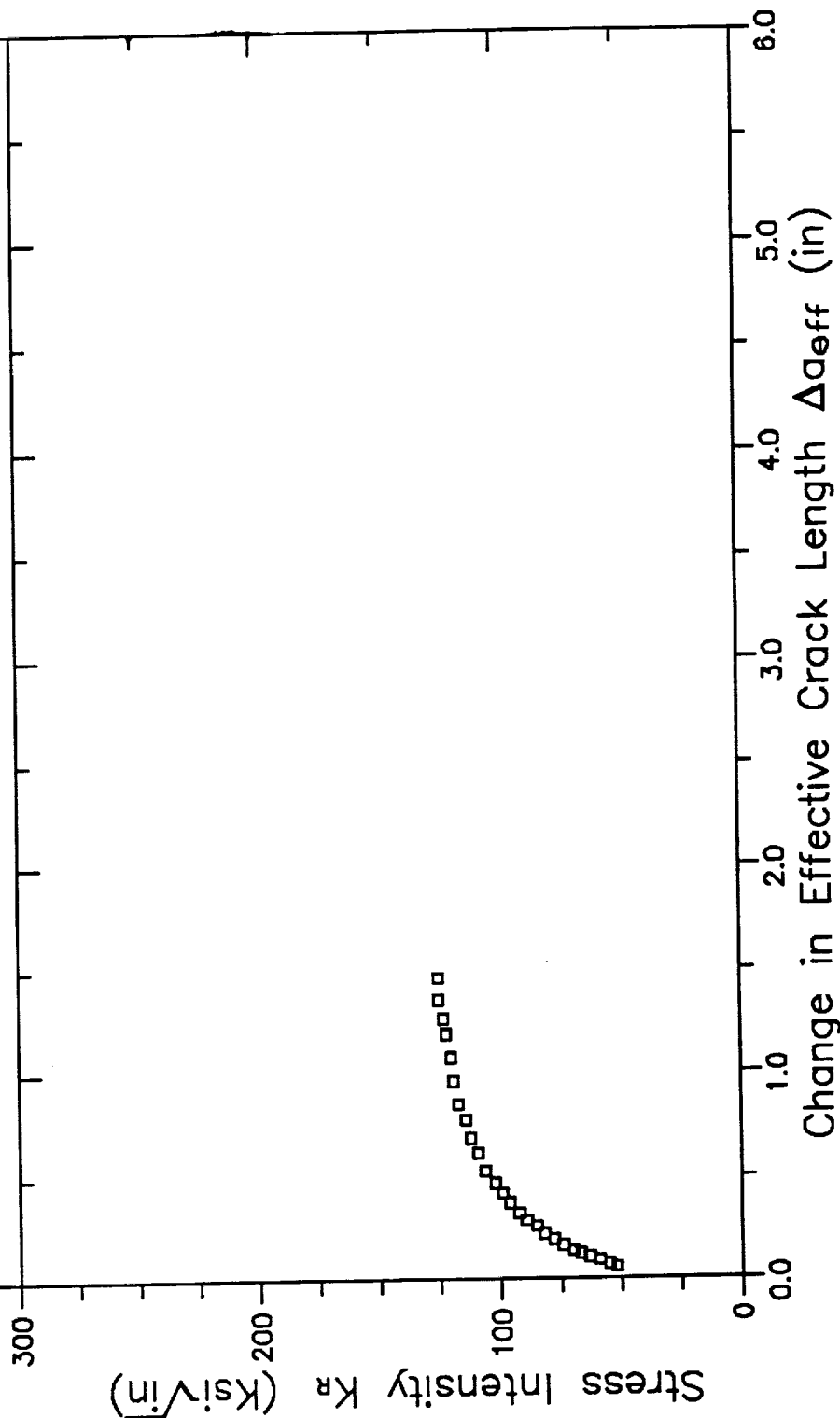


# RESISTANCE CURVE

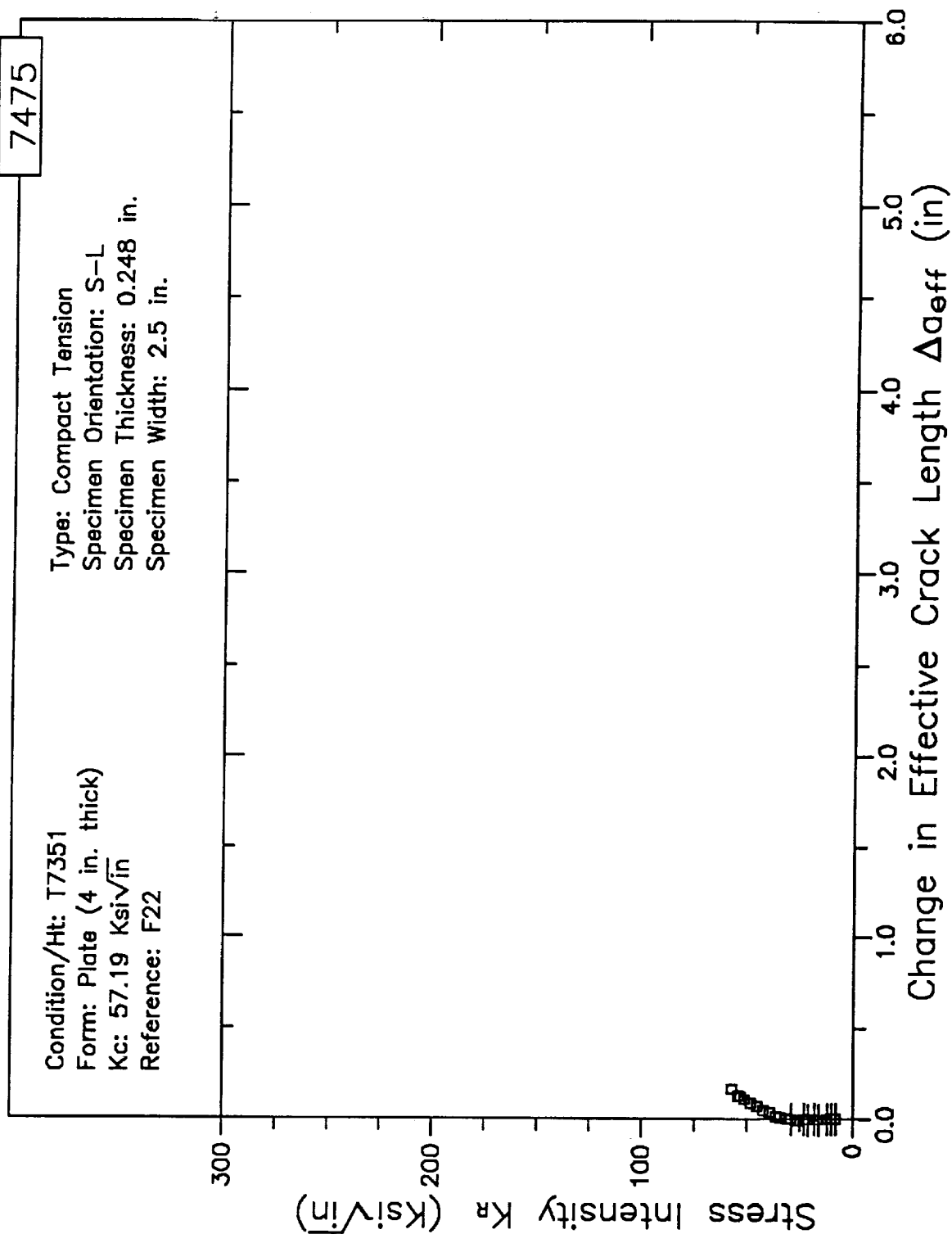
7475

Condition/Ht: T7351  
Form: Plate (4 in. thick)  
Kc: 105.84 Ksi√in  
Reference: F22

Type: Compact Tension  
Specimen Orientation: L-T  
Specimen Thickness: 0.251 in.  
Specimen Width: 6.002 in.



# RESISTANCE CURVE

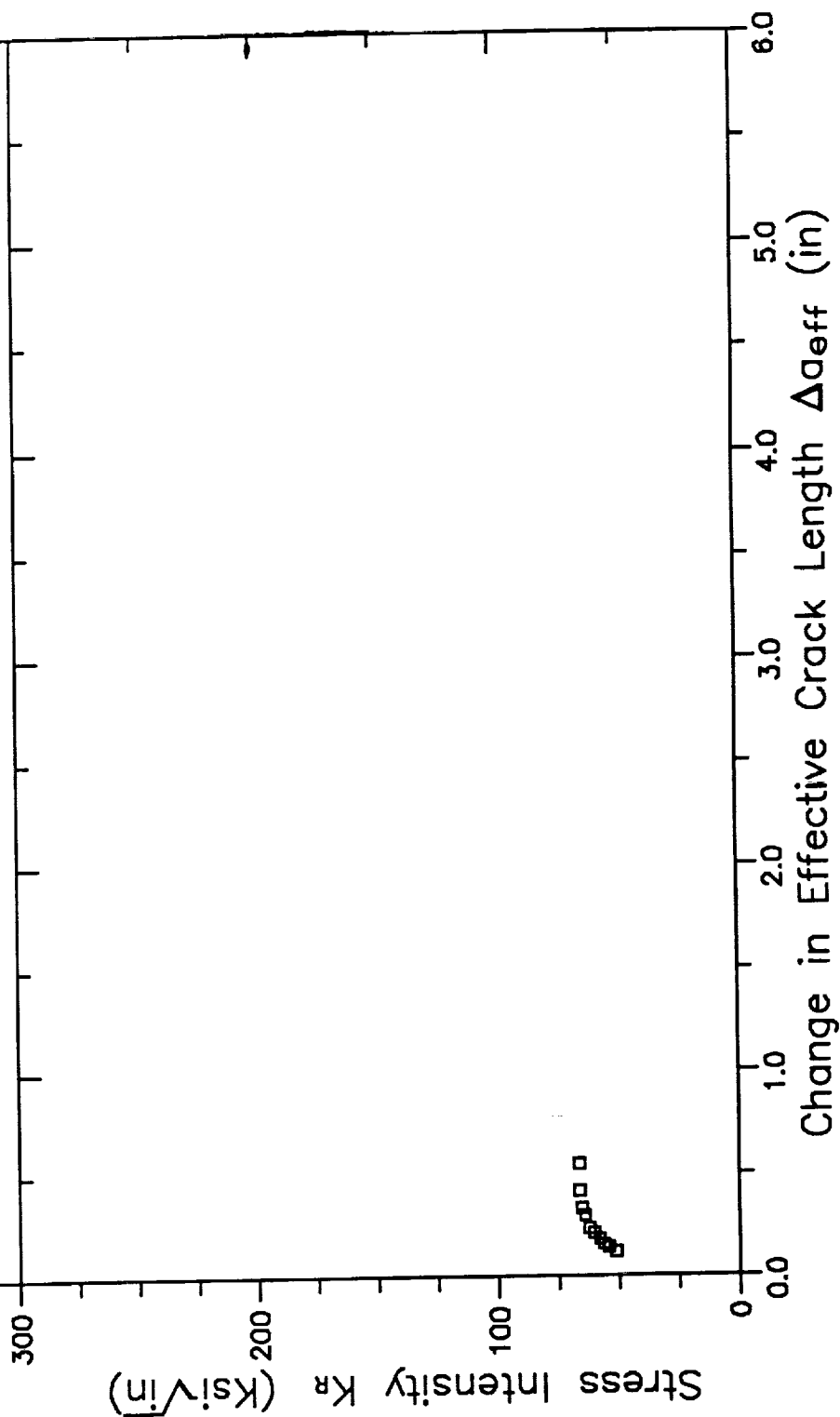


# RESISTANCE CURVE

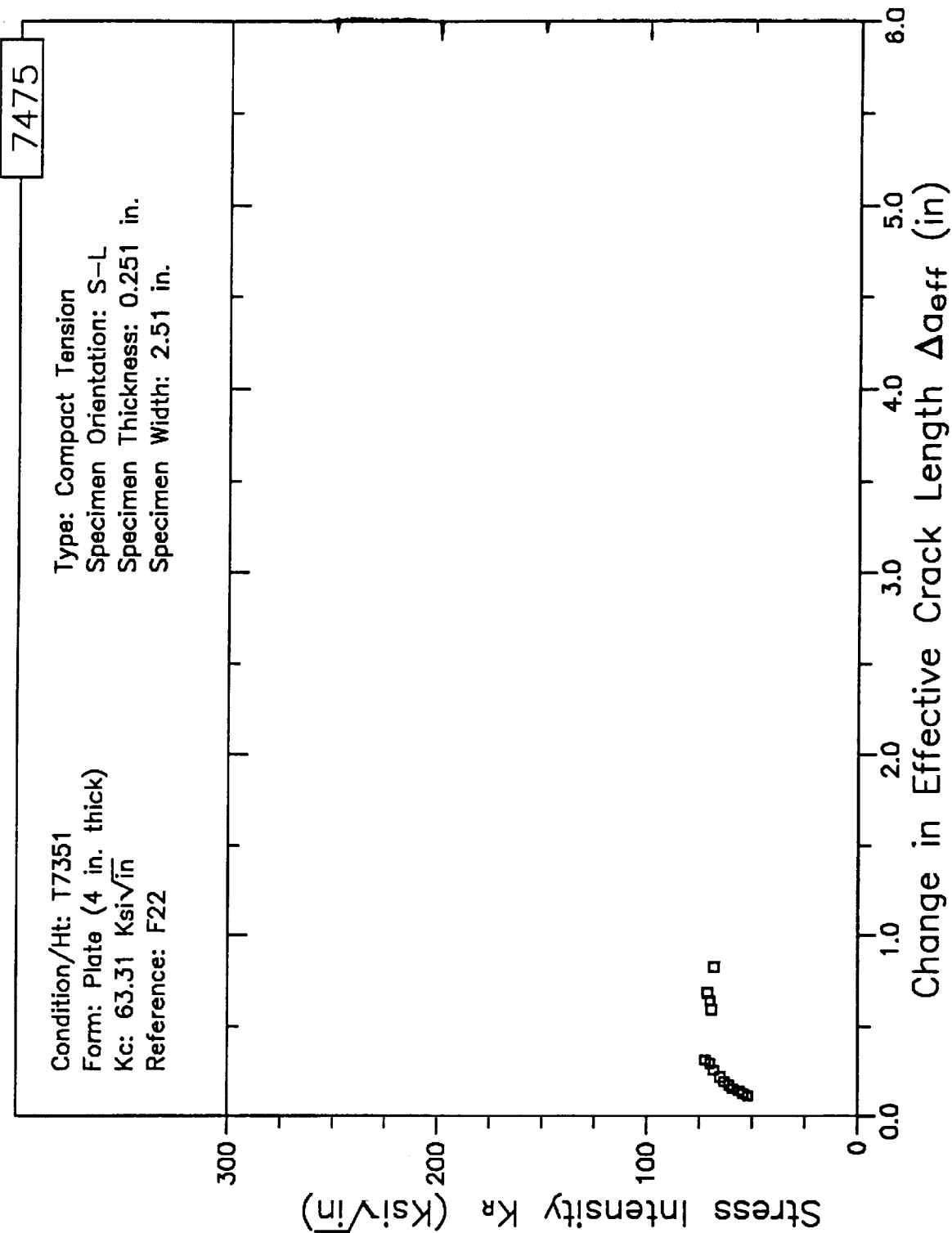
7475

Condition/Ht: T7351  
Form: Plate (4 in. thick)  
Kc: 58.07 Ksi $\sqrt{\text{in}}$   
Reference: F22

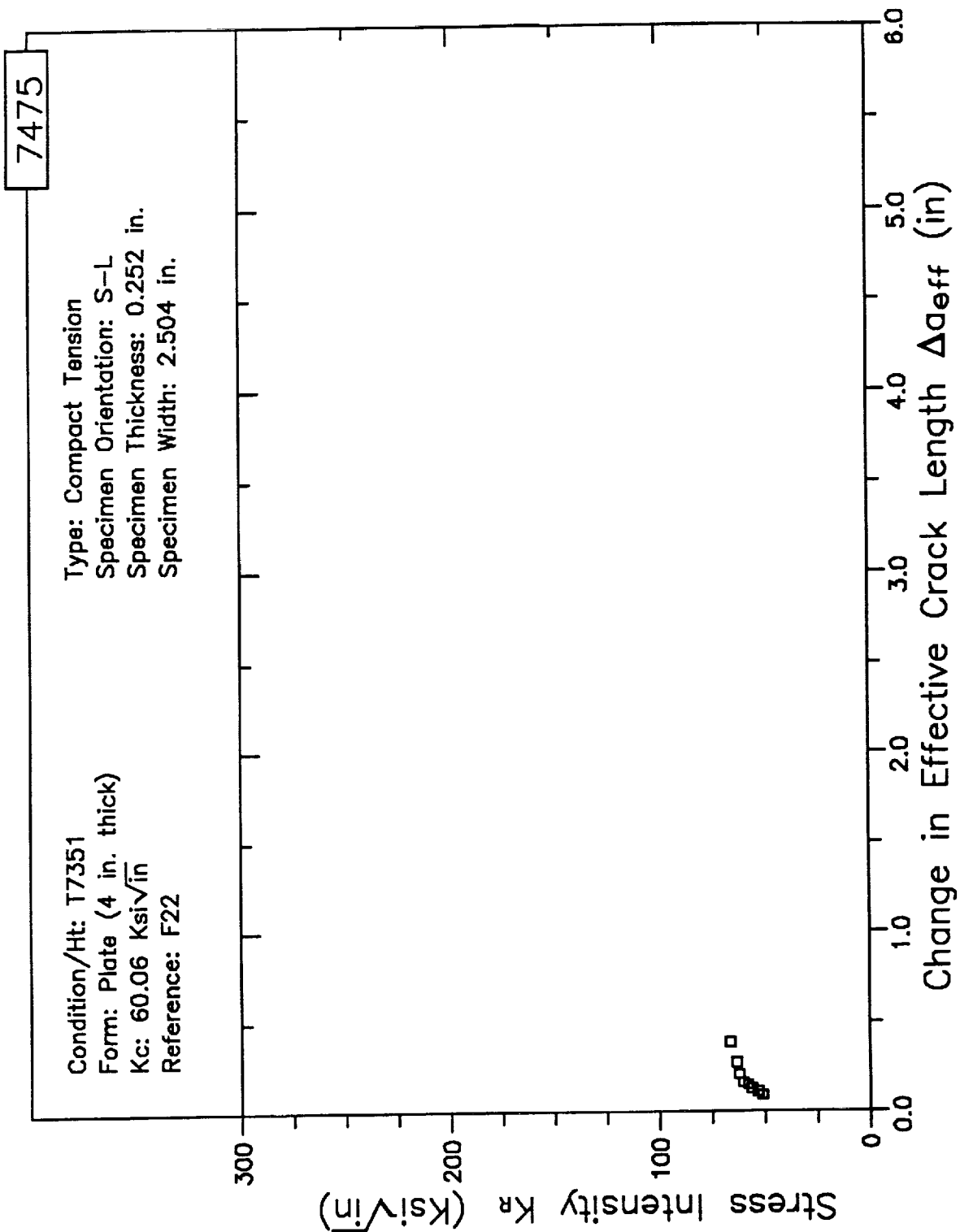
Type: Compact Tension  
Specimen Orientation: S-L  
Specimen Thickness: 0.251 in.  
Specimen Width: 2.5 in.



# RESISTANCE CURVE



# RESISTANCE CURVE



**Appendix D**  
**Graphical Presentation of FCG Rate and R-Curve Data for Nickel**

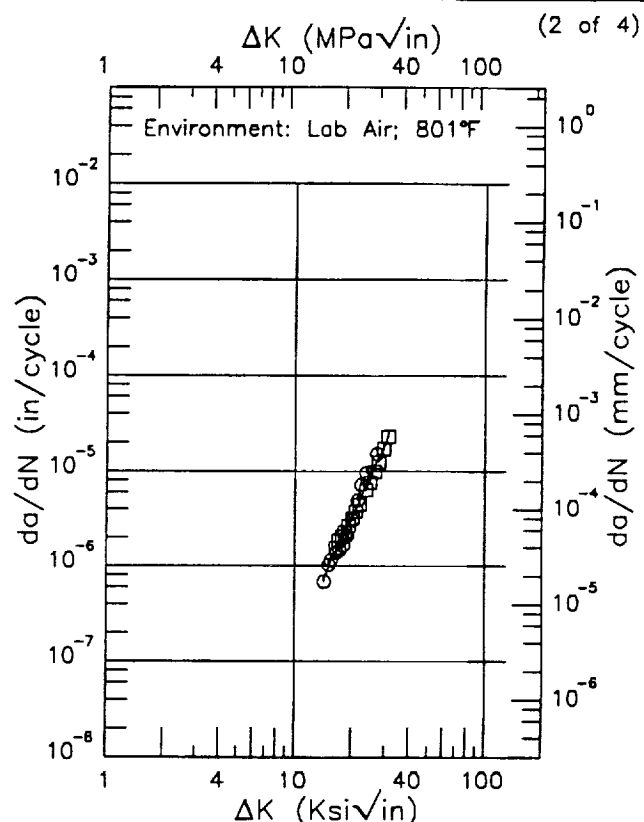
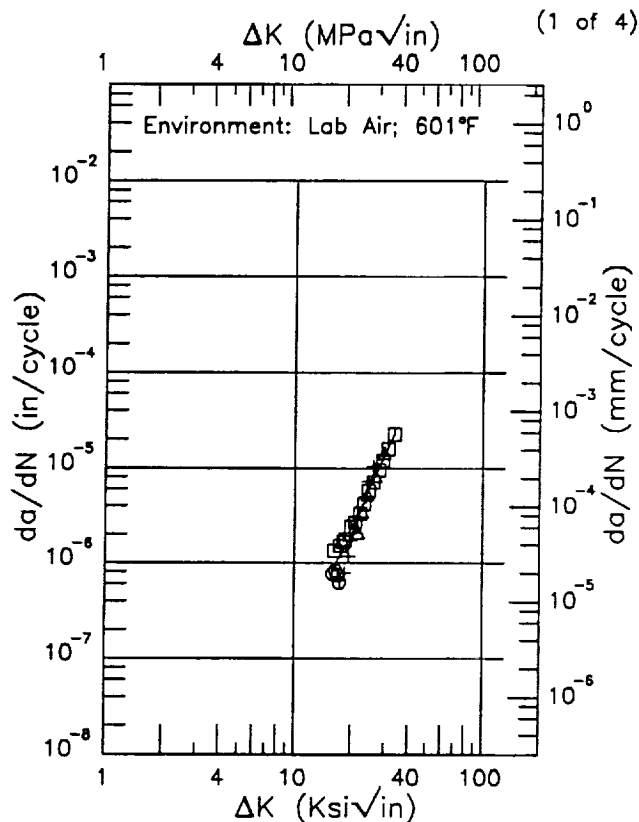




# E INCOLOY 800

Condition/Ht: ANNEALED  
 Form: Plate  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.05  
 Frequency: 0.7 Hz

Yield Strength: 27. - 35.5 ksi  
 Ult. Strength: 75.6 - 76.6 ksi  
 Specimen Thk: 0.427 - 0.535 in.  
 Specimen Width: 2 - 2.006 in.  
 Ref: EPWHN



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
15.82 (min)	0.924
16.	0.899
20.	1.92
25.	6.53
30.	13.7
33.57 (max)	22.3

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
14.22 (min)	0.714
16.	1.28
20.	3.13
25.	9.35
30.	18.8
30.92 (max)	23.6

RMS %  
 Error  
 22.70

Life Prediction Ratio Summary

+0 Δ □

0. .5 .8 1.25 2.

RMS %  
 Error  
 14.33

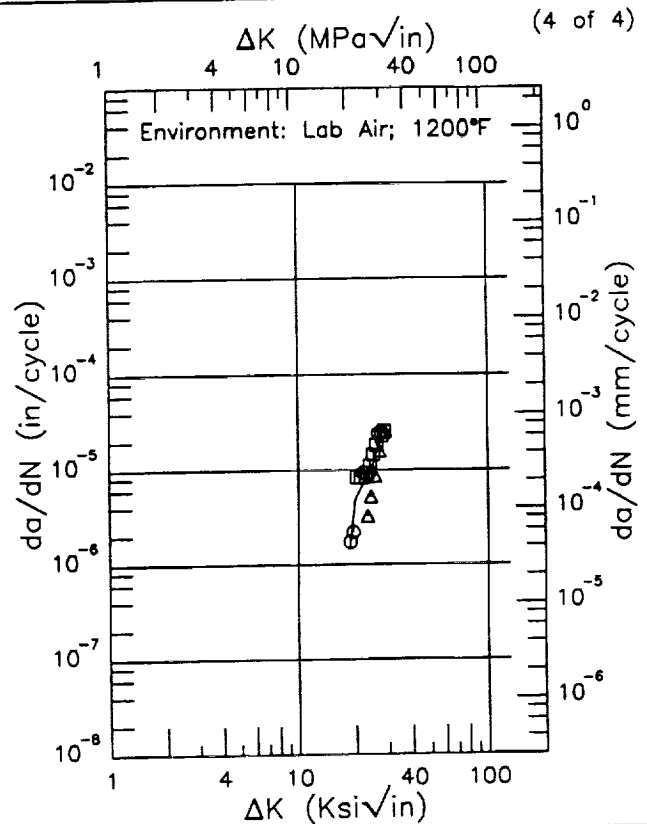
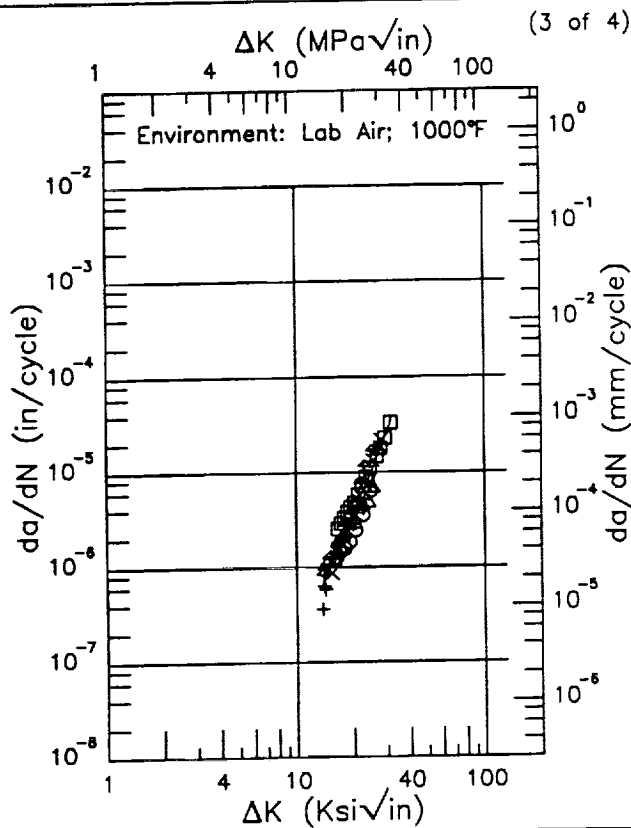
Life Prediction Ratio Summary

□

0. .5 .8 1.25 2.

Condition/Ht: ANNEALED  
Form: Plate  
Specimen Type: CT  
Orientation:  
Stress Ratio: 0.05  
Frequency: 0.7 Hz

Yield Strength: 27. - 35.5 ksi  
Ult. Strength: 75.6 - 76.6 ksi  
Specimen Thk: 0.427 - 0.535 in.  
Specimen Width: 2 - 2.006 in.  
Ref: EPWHN



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
13.64 (min)	0.665
16.	1.45
20.	3.90
25.	10.5
30.	25.9
31.65 (max)	34.7

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
18.72 (min)	1.45
20.	4.92
25.	11.8
28.58 (max)	28.7

RMS %  
Error  
27.84

Life Prediction Ratio Summary  

 0. .5 .8 1.25 2.

RMS %  
Error  
30.40

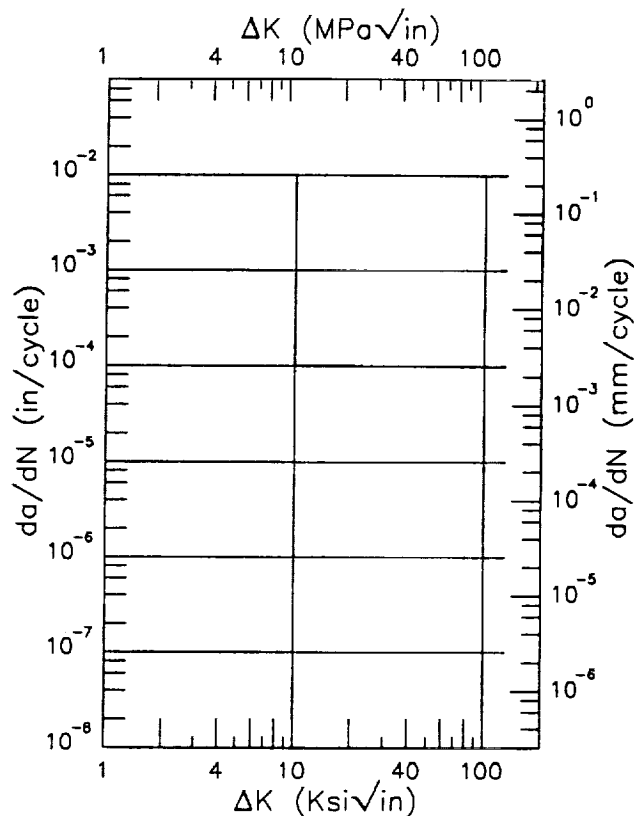
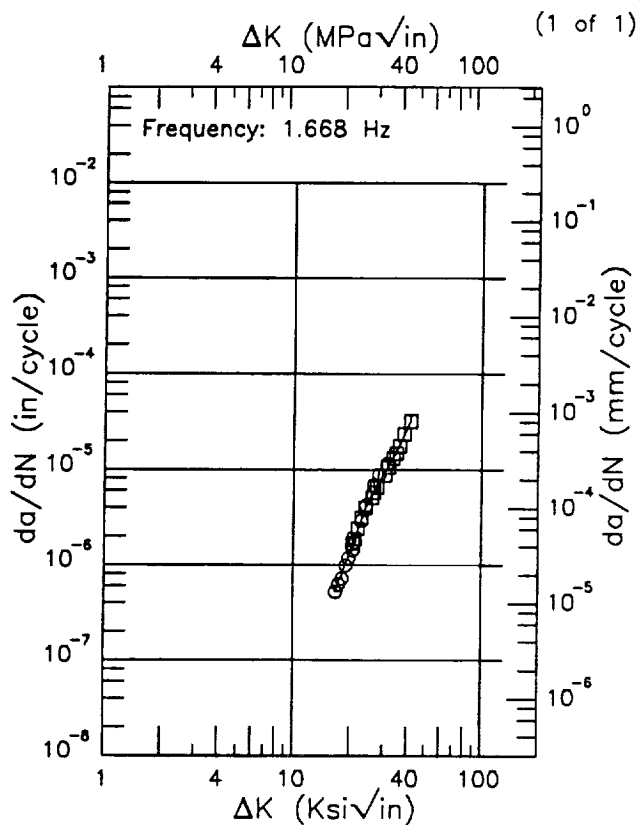
Life Prediction Ratio Summary  

 0. .5 .8 1.25 2.

# F INCOLOY 800

Condition/Ht: ANNEALED  
 Form: Plate  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.05  
 Environment: LAB AIR; RT

Yield Strength: 27. - 35.5 ksi  
 Ult. Strength: 75.6 - 76.6 ksi  
 Specimen Thk: 0.429 - 0.536 in.  
 Specimen Width: 2 - 2.002 in.  
 Ref: EPWHN



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
16.68 (min)	0.522
20.	1.36
25.	4.78
30.	9.04
35.	15.4
40.	27.4
41.47 (max)	32.0

$\Delta K$  (Ksi√in)  $da/dN$  ( $10^{-6}$  in/cycle)

RMS %  
 Error  
 7.85

Life Prediction Ratio Summary  
  
 0. .5 .8 1.25 2.

RMS %  
 Error

Life Prediction Ratio Summary  
  
 0. .5 .8 1.25 2.

D1-4

R INCOLOY 800

Condition/Ht: ANNEALED

Form:

Specimen Type: CT

Orientation:

Frequency: 6.7 Hz

Environment: LAB AIR; 1000°F

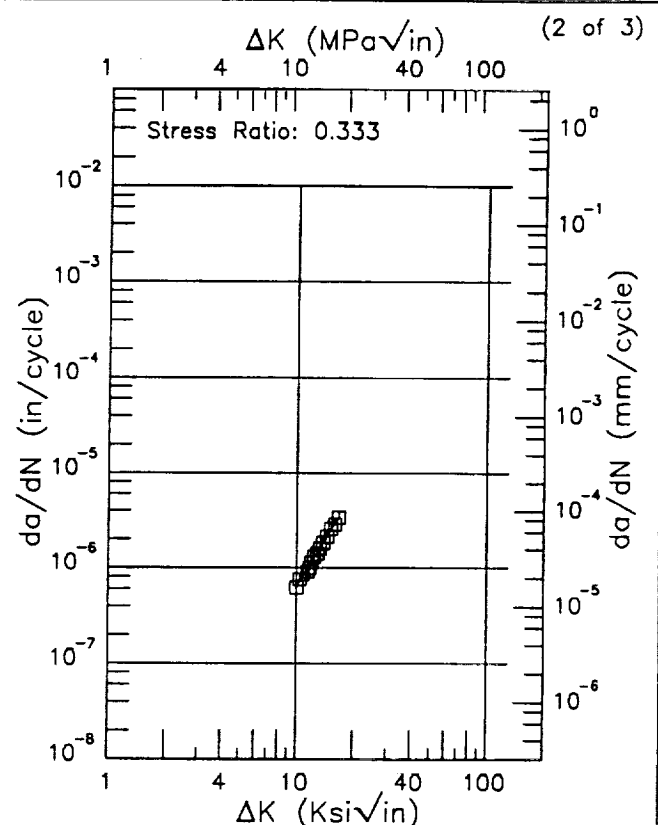
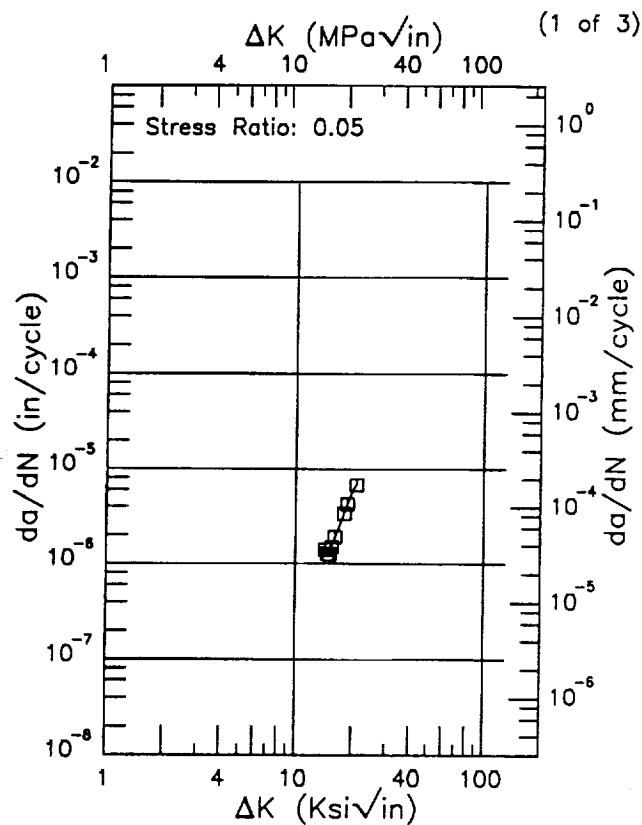
Yield Strength: 27. ksi

Ult. Strength: 76.4 ksi

Specimen Thk: 0.501 - 0.502 in.

Specimen Width: 2.001 - 2.003 in.

Ref: EPWHN



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
14.23 (min)	1.23
16.	1.79
20.	5.99
20.72 (max)	6.71

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
9.98 (min)	0.639
10.	0.644
13.	1.46
16.	2.92
16.60 (max)	3.29

RMS %  
Error  
8.31

Life Prediction Ratio Summary

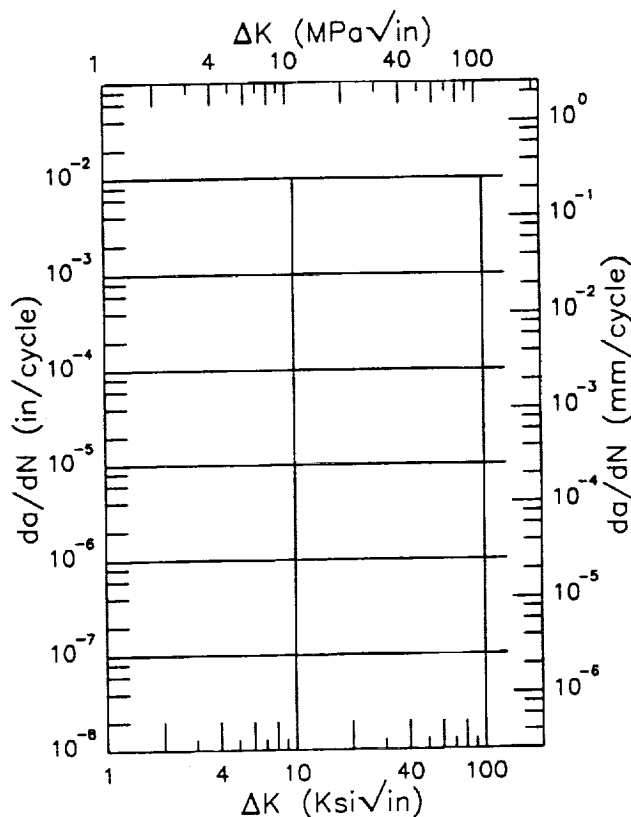
0. .5 .8 1.25 2.

RMS %  
Error  
3.10

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

Yield Strength: 27. ksi  
Ult. Strength: 76.4 ksi  
Specimen Thk: 0.501 - 0.502 in.  
Specimen Width: 2.001 - 2.003 in.  
Ref: EPWHN



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
7.99 (min)	0.530
8.	0.534
9.	0.789
10.	1.07
13.	1.99
14.54 (max)	2.45

$$\Delta K \text{ (Ksi}\sqrt{\text{in}}) \quad da/dN \text{ (10}^{-6}\text{in/cycle)}$$

Life Prediction Ratio Summary

# R INCOLOY 800

Condition/Ht: ANNEALED

Form:

Specimen Type: CT

Orientation:

Frequency: 6.7 Hz

Environment: LAB AIR;801°F

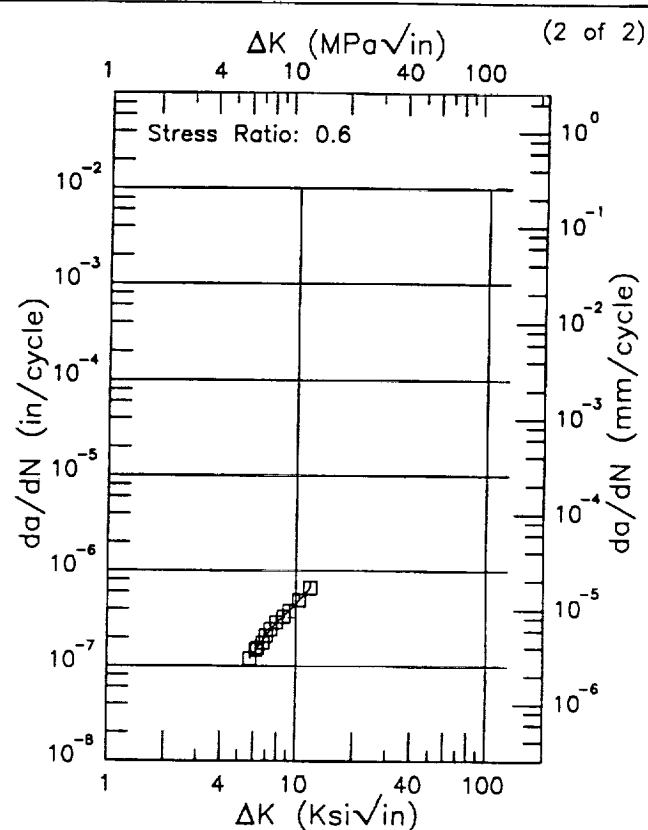
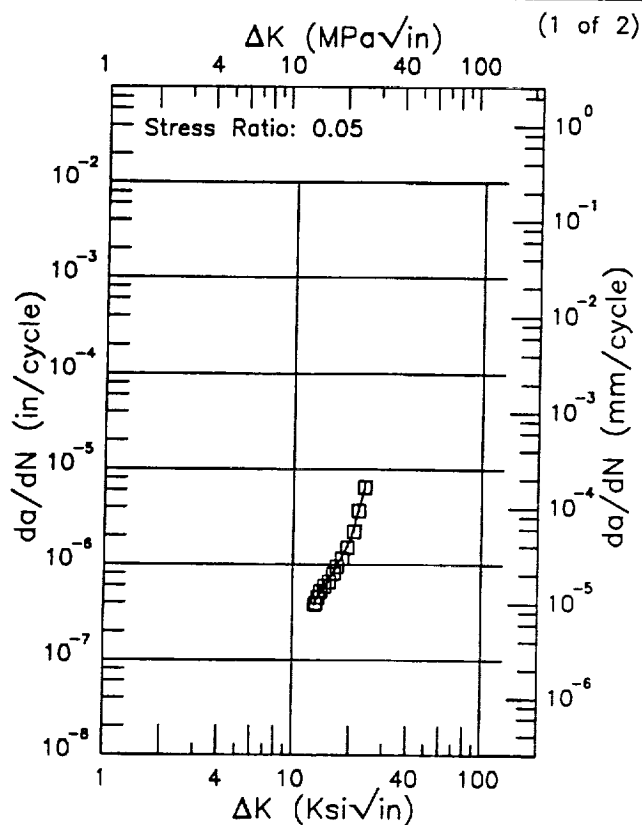
Yield Strength: 27. ksi

Ult. Strength: 76.4 ksi

Specimen Thk: 0.501 - 0.502 in.

Specimen Width: 2.003 - 2.004 in.

Ref: EPWHN

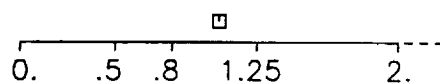


ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
12.92 (min)	0.382
13.	0.392
16.	0.772
20.	1.78
23.61 (max)	6.47

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
5.73 (min)	0.122
6.	0.135
7.	0.208
8.	0.291
9.	0.361
10.	0.447
11.83 (max)	0.650

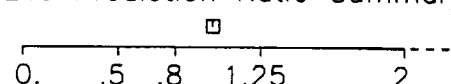
RMS %  
Error  
4.87

Life Prediction Ratio Summary



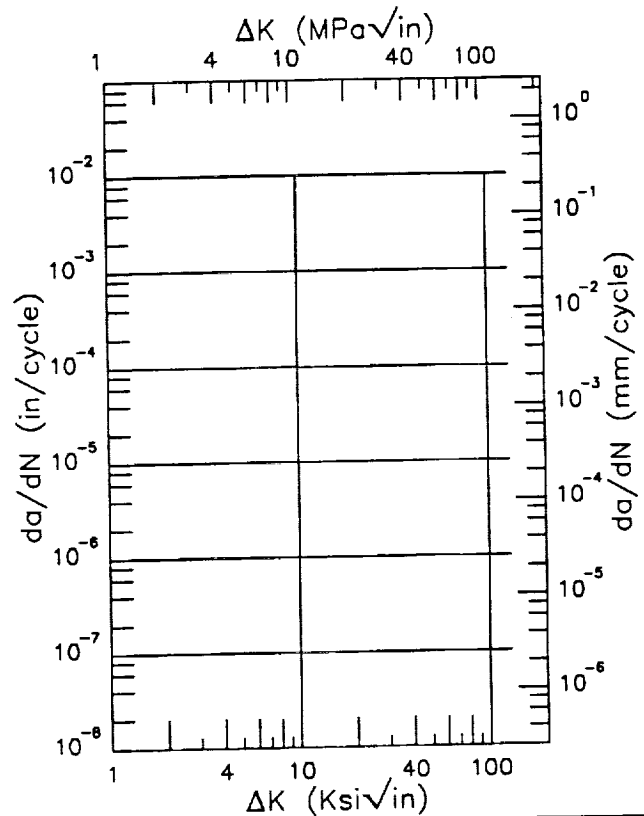
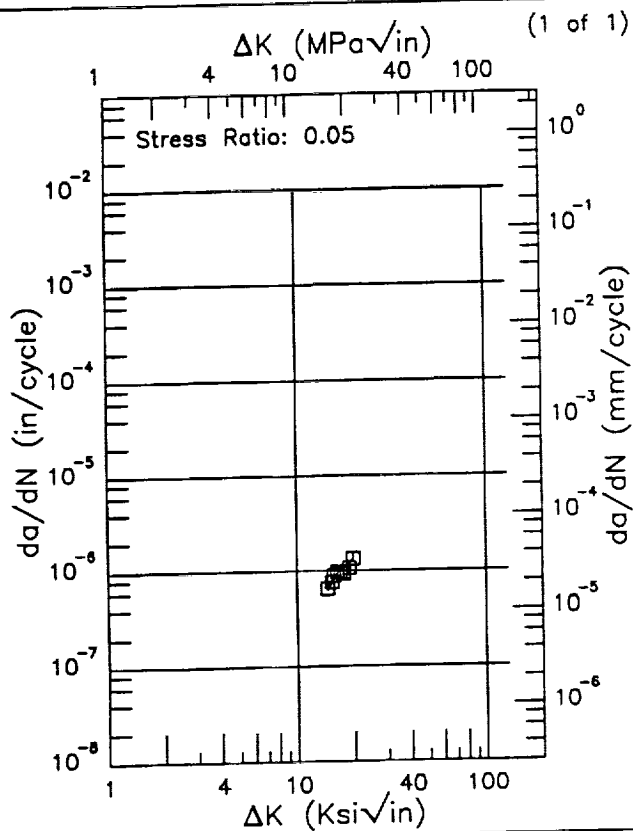
RMS %  
Error  
2.04

Life Prediction Ratio Summary



Condition/Ht: -99  
 Form:  
 Specimen Type: CT  
 Orientation:  
 Frequency: 0.7 Hz  
 Environment: LAB AIR;801°F

Yield Strength: 27.3 ksi  
 Ult. Strength: 70. ksi  
 Specimen Thk: 0.078 in.  
 Specimen Width: 1.156 in.  
 Ref: EPWHN



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
14.42 (min)	0.634
16.	0.916
19.69 (max)	1.32

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)

RMS %  
 Error  
 7.37

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS %  
 Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.



# R INCOLOY 800

Condition/Ht: -99

Form:

Specimen Type: CT

Orientation:

Frequency: 0.7 Hz

Environment: LAB AIR;801°F

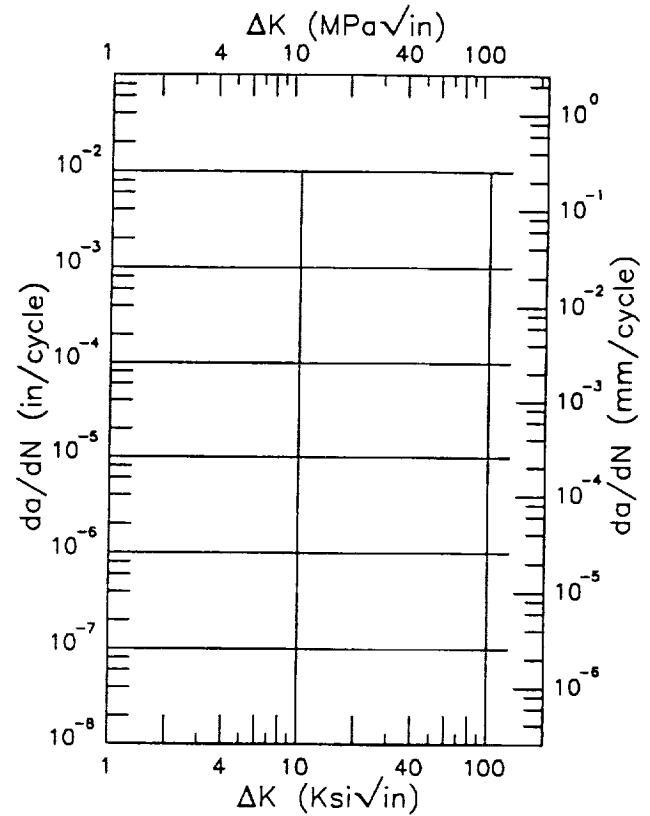
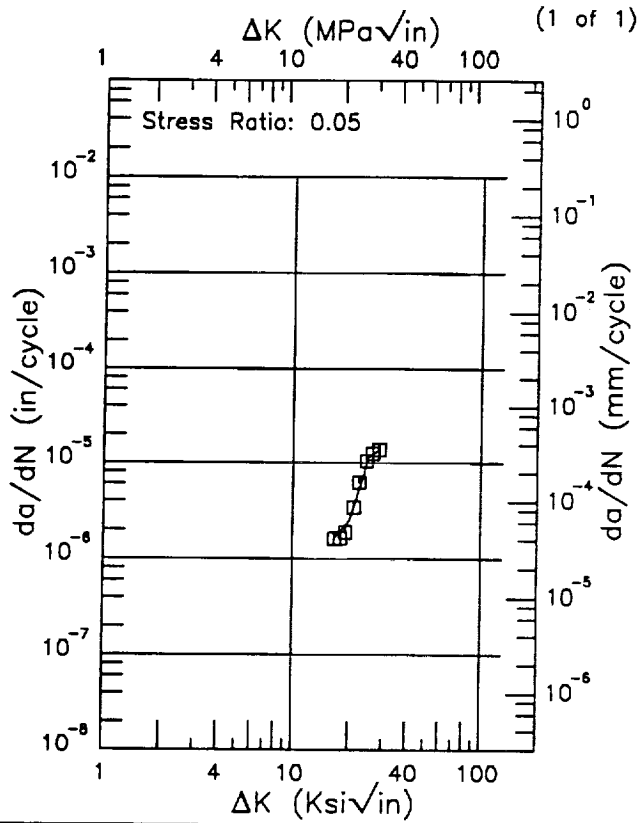
Yield Strength: 27.3 ksi

Ult. Strength: 70. ksi

Specimen Thk: 0.298 in.

Specimen Width: 1.157 in.

Ref: EPWHN



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
16.56 (min)	1.60
20.	2.45
25.	11.4
28.40 (max)	13.6

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
--------------------------------------	-----------------------------------

RMS %  
Error  
9.45

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS %  
Error

Life Prediction Ratio Summary

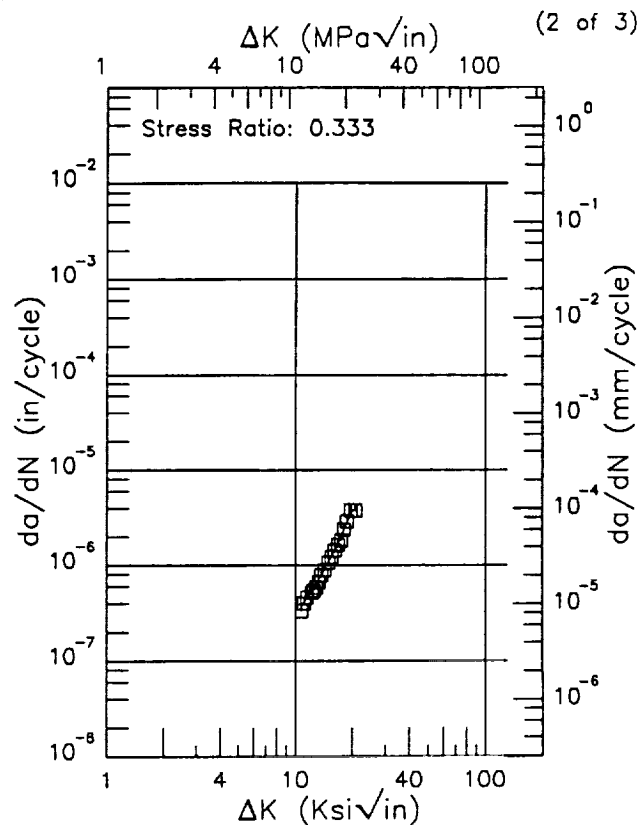
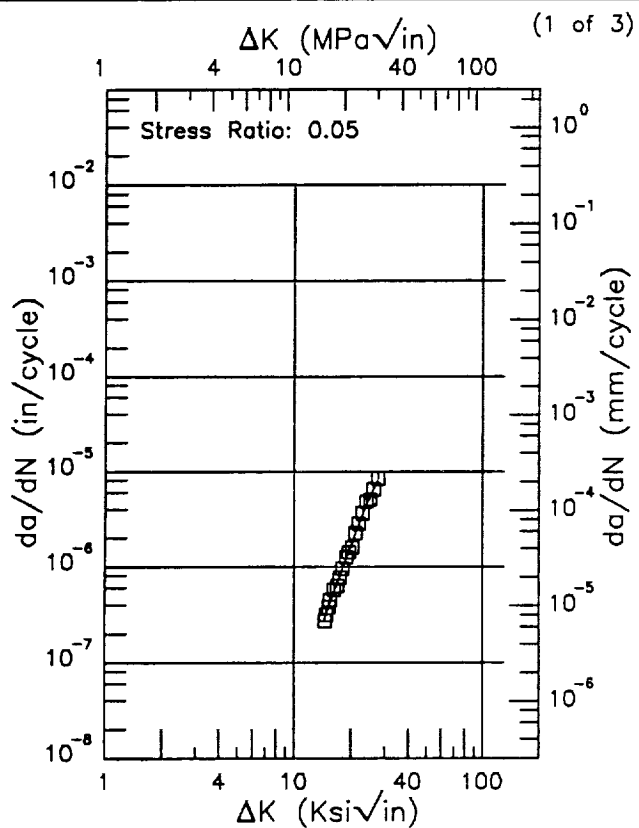
0. .5 .8 1.25 2.

D1-10

R | INCONEL 600 |

Condition/Ht: ANNEALED  
 Form: Plate  
 Specimen Type: CT  
 Orientation:  
 Frequency: 6.7 Hz  
 Environment: LAB AIR;801°F

Yield Strength: 25.3 ksi  
 Ult. Strength: 86.8 ksi  
 Specimen Thk: 0.412 - 0.413 in.  
 Specimen Width: 2.002 - 2.003 in.  
 Ref: EPWHN



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
14.43 (min)	0.285
16.	0.499
20.	1.69
25.	5.48
27.51 (max)	8.06

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
10.70 (min)	0.362
13.	0.646
16.	1.33
20.	3.72
20.71 (max)	3.79

RMS %  
 Error  
 5.54

Life Prediction Ratio Summary  

 0. .5 .8 1.25 2.

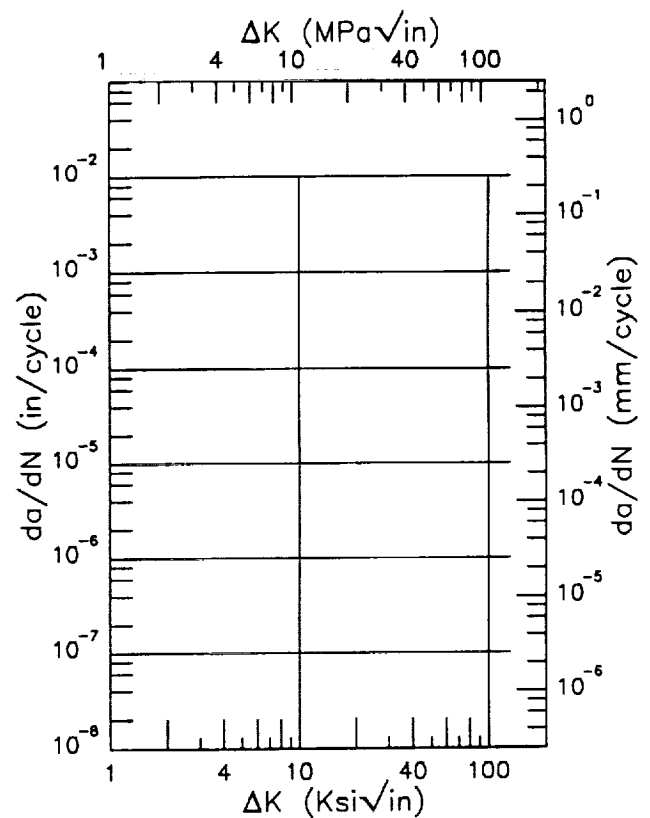
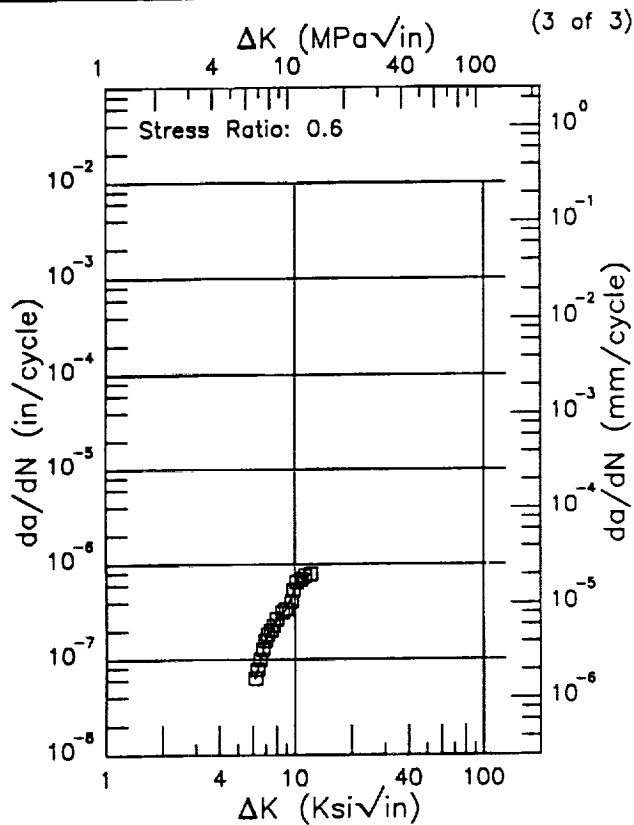
RMS %  
 Error  
 4.81

Life Prediction Ratio Summary  

 0. .5 .8 1.25 2.

Condition/Ht: ANNEALED  
 Form: Plate  
 Specimen Type: CT  
 Orientation:  
 Frequency: 6.7 Hz  
 Environment: LAB AIR;801°F

Yield Strength: 25.3 ksi  
 Ult. Strength: 86.8 ksi  
 Specimen Thk: 0.412 - 0.413 in.  
 Specimen Width: 2.002 - 2.003 in.  
 Ref: EPWHN



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
6.15 (min)	0.0616
7.	0.163
8.	0.260
9.	0.347
10.	0.563
12.08 (max)	0.789

$\Delta K$  (Ksi $\sqrt{\text{in}}$ )       $da/dN$  ( $10^{-6}$  in/cycle)

RMS %  
 Error  
 5.82

Life Prediction Ratio Summary

RMS %  
 Error

Life Prediction Ratio Summary

R

## INCONEL 600

Condition/Ht: ANNEALED

Form: Plate

Specimen Type: CT

Orientation:

Frequency: 6.7 Hz

Environment: LAB AIR; 1000°F

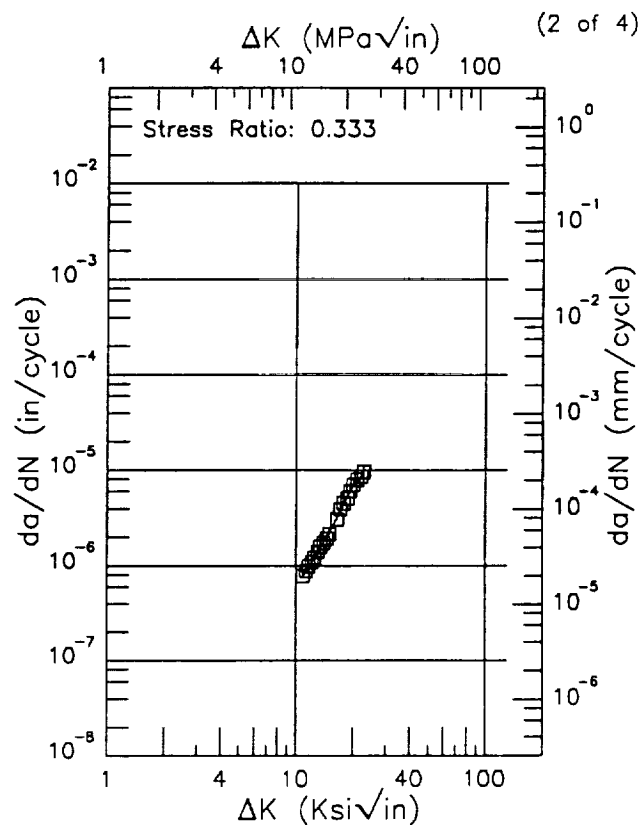
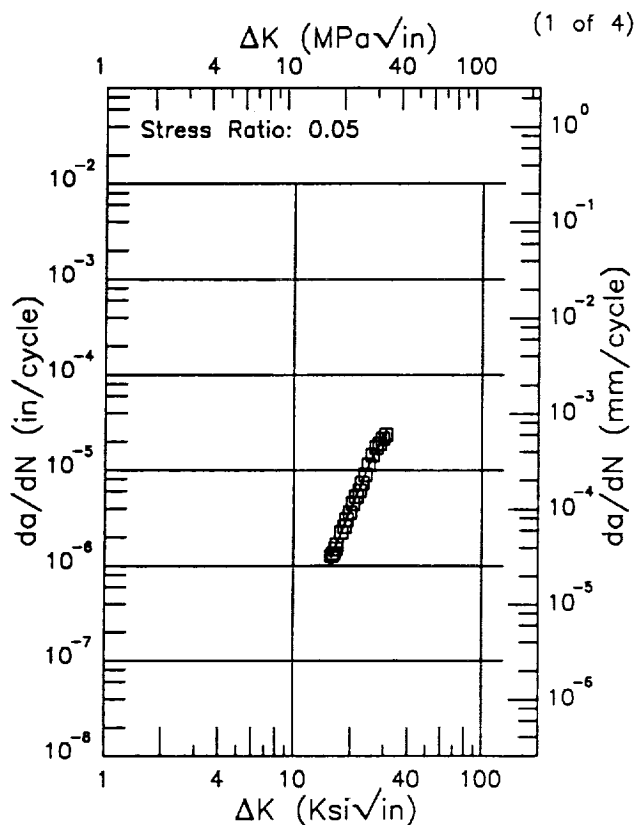
Yield Strength: 25.3 ksi

Ult. Strength: 86.8 ksi

Specimen Thk: 0.41 - 0.413 in.

Specimen Width: 2.002 - 2.004 in.

Ref: EPWHN



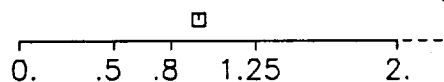
$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
15.76 (min)	1.24
16.	1.32
20.	3.84
25.	11.7
30.	22.7
30.59 (max)	23.8

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
10.87 (min)	0.762
13.	1.37
16.	2.77
20.	6.77
22.83 (max)	9.20

RMS %  
Error

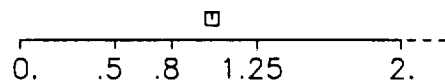
3.86

Life Prediction Ratio Summary

RMS %  
Error

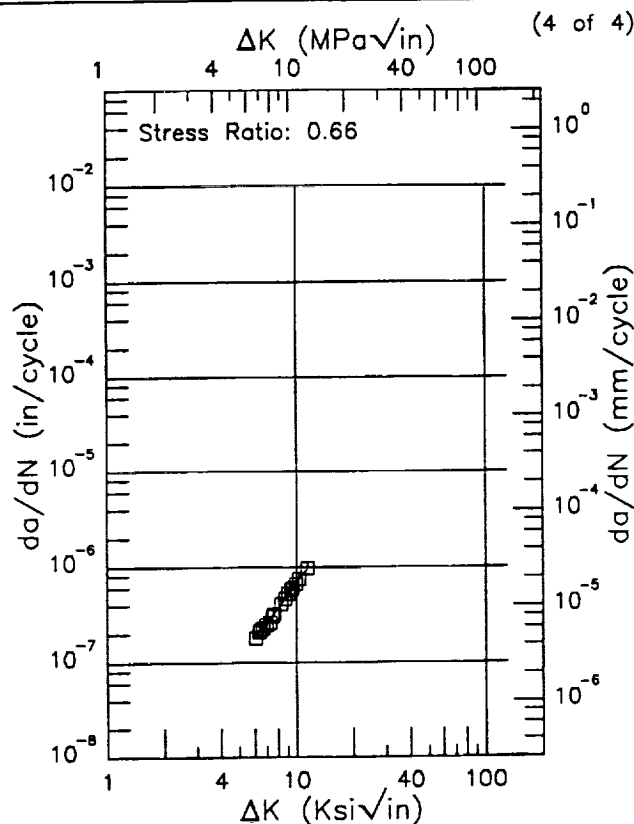
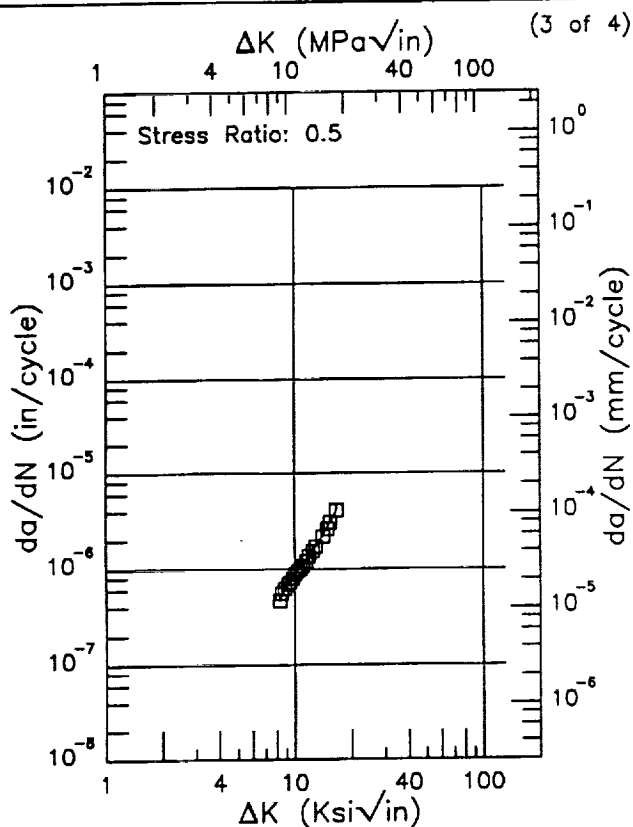
2.79

Life Prediction Ratio Summary



Condition/Ht: ANNEALED  
 Form: Plate  
 Specimen Type: CT  
 Orientation:  
 Frequency: 6.7 Hz  
 Environment: LAB AIR;1000°F

Yield Strength: 25.3 ksi  
 Ult. Strength: 86.8 ksi  
 Specimen Thk: 0.41 - 0.413 in.  
 Specimen Width: 2.002 - 2.004 in.  
 Ref: EPWHN



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
8.26 (min)	0.478
9.	0.645
10.	0.857
13.	1.74
16.	3.51
16.55 (max)	4.10

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
6.07 (min)	0.187
7.	0.256
8.	0.367
9.	0.520
10.	0.681
11.40 (max)	0.956

RMS %  
 Error  
 2.47

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS %  
 Error  
 1.83

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

# E | INCONEL 600 |

Condition/Ht: ANNEALED

Form: Plate

Specimen Type: CT

Orientation:

Stress Ratio: 0.05

Frequency: 0.1 - 0.7 Hz

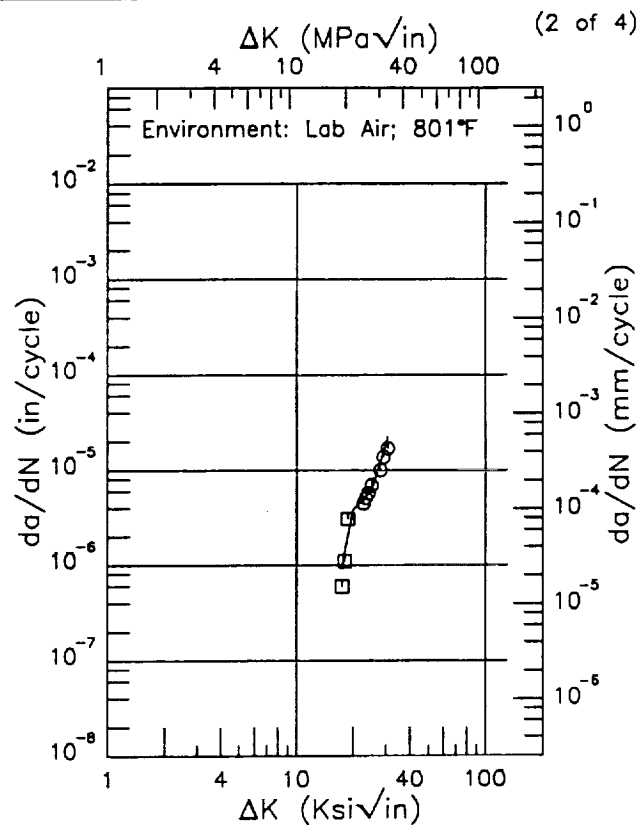
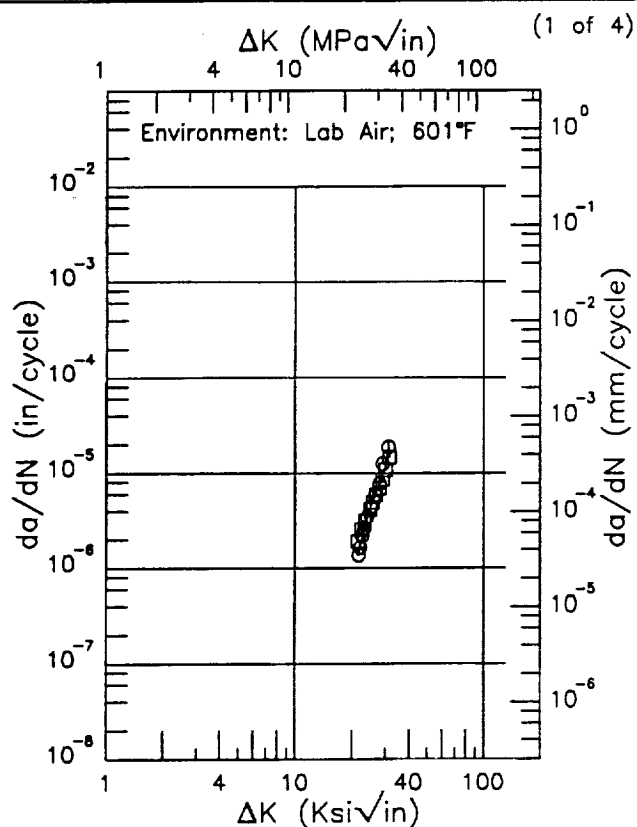
Yield Strength: 25.3 ksi

Ult. Strength: 86.8 ksi

Specimen Thk: 0.396 - 0.428 in.

Specimen Width: 1.996 - 2.005 in.

Ref: EPWHN



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
21.43 (min)	1.38
25.	4.30
30.	11.7
31.57 (max)	18.9

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
17.45 (min)	0.922
20.	3.87
25.	6.06
30.	19.1
30.35 (max)	22.3

RMS %  
Error  
15.91

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

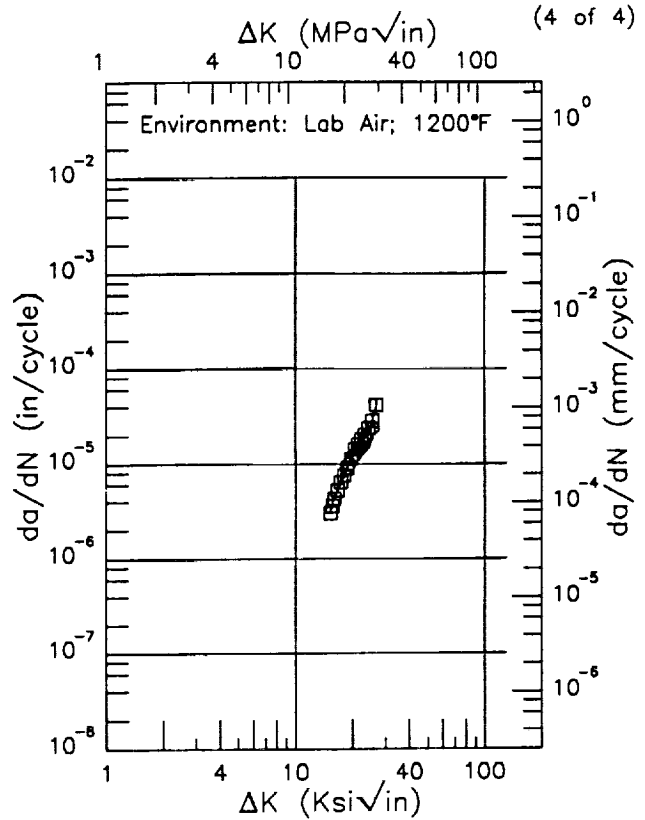
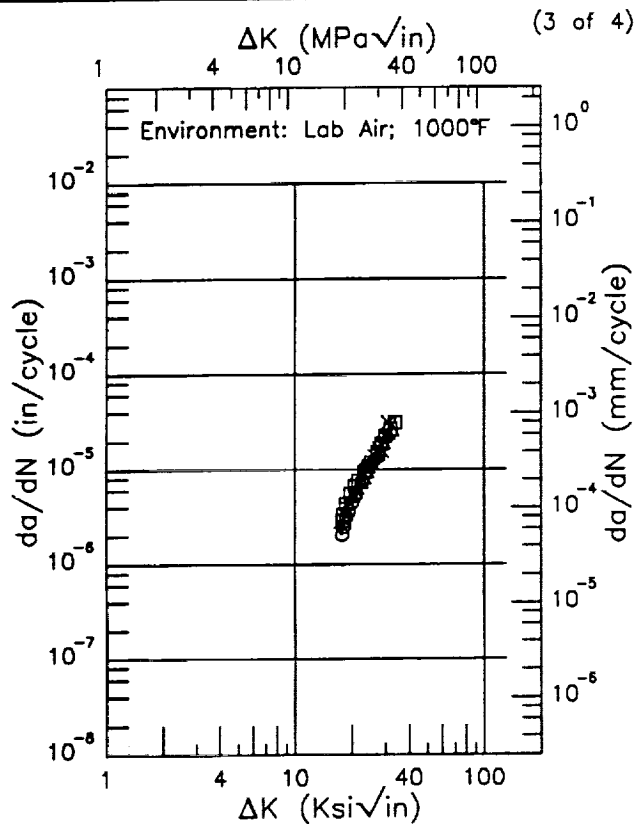
RMS %  
Error  
24.30

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

Condition/Ht: ANNEALED  
 Form: Plate  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.05  
 Frequency: 0.1 - 0.7 Hz

Yield Strength: 25.3 ksi  
 Ult. Strength: 86.8 ksi  
 Specimen Thk: 0.396 - 0.428 in.  
 Specimen Width: 1.996 - 2.005 in.  
 Ref: EPWHN



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
17.16 (min)	2.14
20.	5.10
25.	11.1
30.	22.3
33.47 (max)	27.8

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
15.21 (min)	3.02
16.	4.20
20.	11.8
25.	24.6
26.71 (max)	39.9

RMS %  
 Error  
 11.36

Life Prediction Ratio Summary  

 0. .5 .8 1.25 2.

RMS %  
 Error  
 6.61

Life Prediction Ratio Summary  

 0. .5 .8 1.25 2.



# F | INCONEL 600 |

Condition/Ht: ANNEALED

Form: Plate

Specimen Type: CT

Orientation:

Stress Ratio: 0.05

Environment: LAB AIR;1000°F

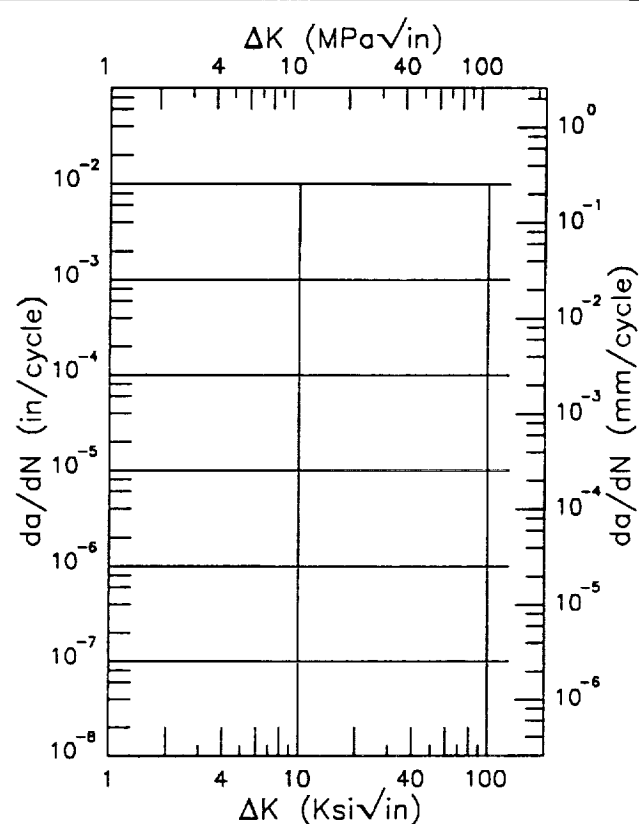
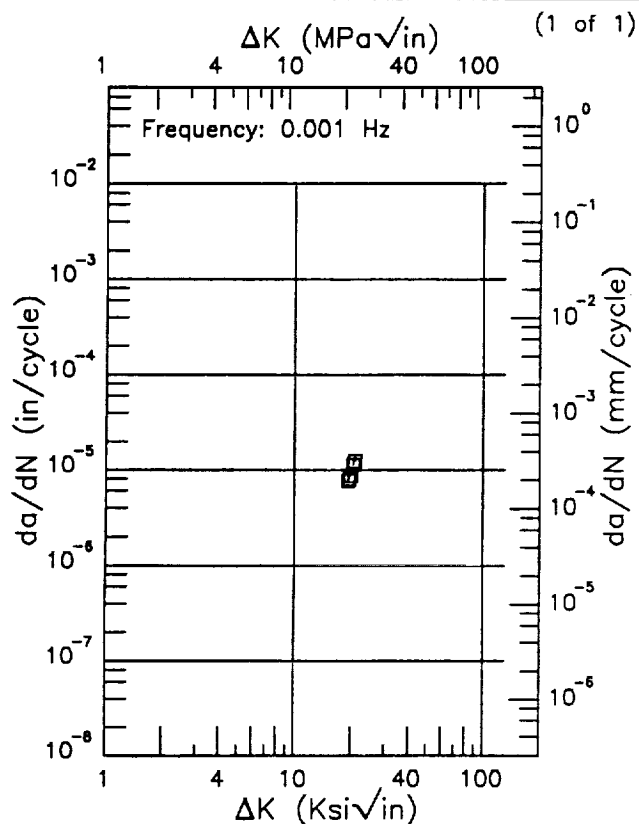
Yield Strength: 25.3 ksi

Ult. Strength: 86.8 ksi

Specimen Thk: 0.411 in.

Specimen Width: 2.004 in.

Ref: EPWHN



$\Delta K$  (Ksi $\sqrt{\text{in}}$ )      da/dN (10<sup>-6</sup>in/cycle)

$\Delta K$  (Ksi $\sqrt{\text{in}}$ )      da/dN (10<sup>-6</sup>in/cycle)

RMS %  
Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.---

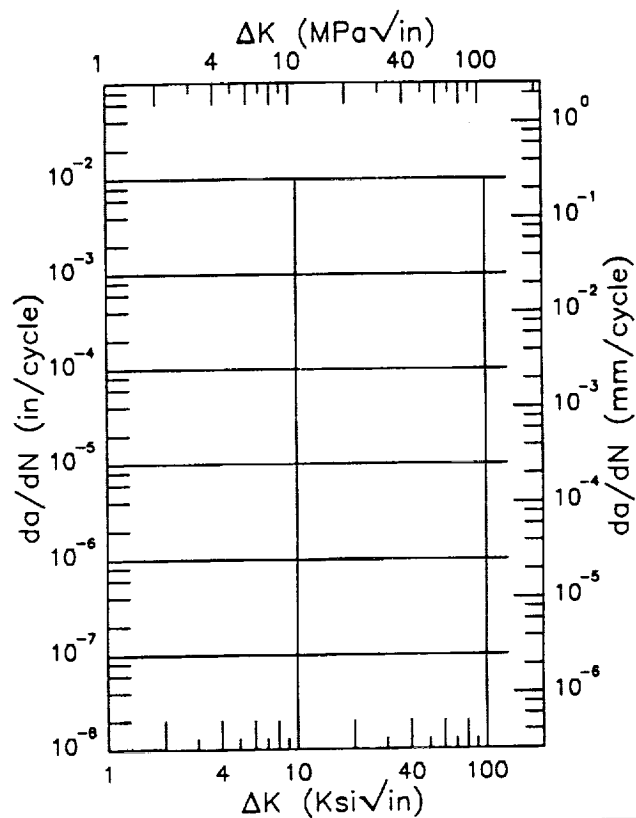
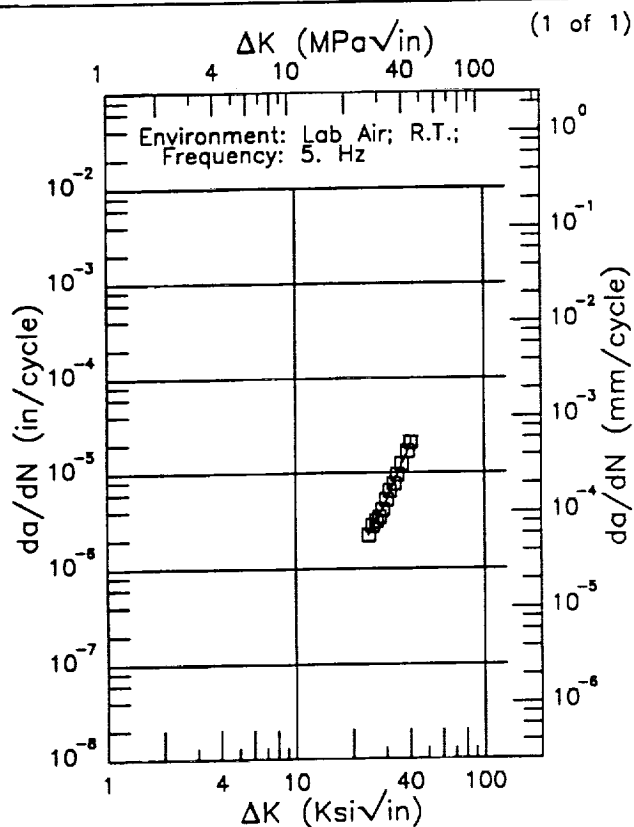
RMS %  
Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.---

Condition/Ht: ANNEALED  
 Form: Plate  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.05

Yield Strength: 25.3 ksi  
 Ult. Strength: 86.8 ksi  
 Specimen Thk: 0.39 in.  
 Specimen Width: 2 in.  
 Ref: EPWHN

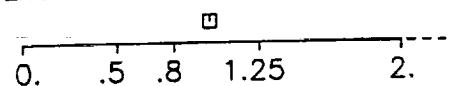


$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
24.09 (min)	2.30
25.	2.60
30.	5.01
35.	10.4
40.	18.8
40.55 (max)	20.3

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
--------------------------------------	-----------------------------------

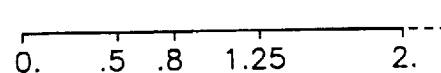
RMS %  
Error  
3.35

Life Prediction Ratio Summary



RMS %  
Error

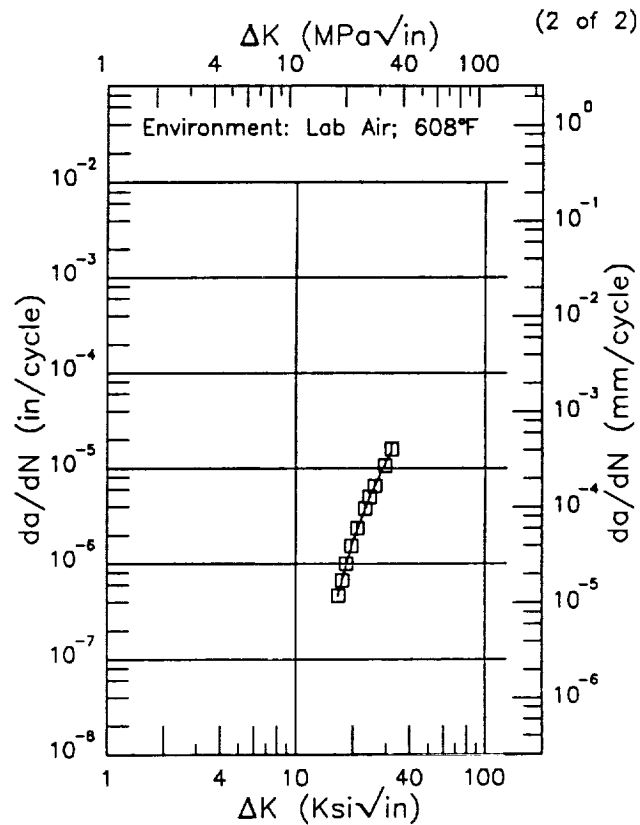
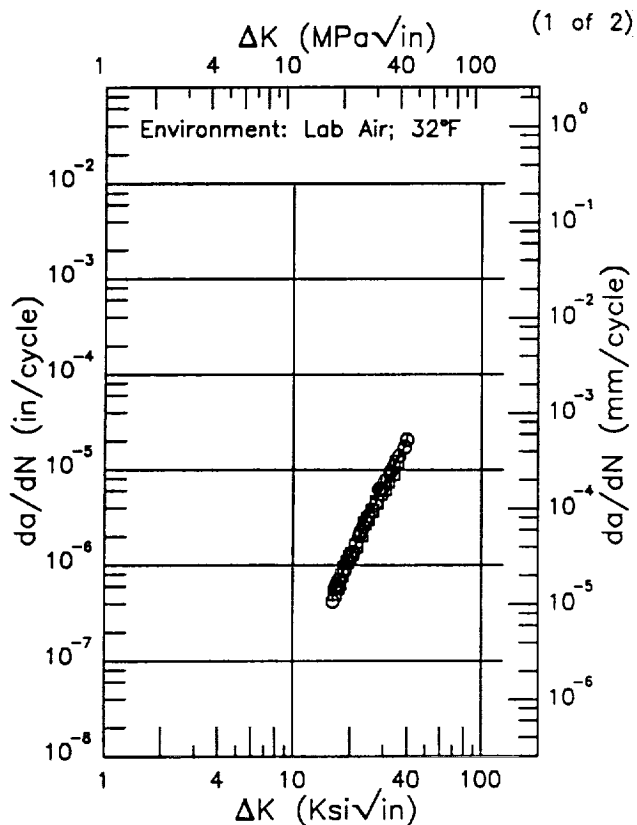
Life Prediction Ratio Summary



# E INCONEL 600

Condition/Ht: -99  
 Form: Plate  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.1  
 Frequency: 10 Hz

Yield Strength: 36.6 ksi  
 Ult. Strength: 95.7 ksi  
 Specimen Thk: 0.984 in.  
 Specimen Width: 1.969 in.  
 Ref: EPBER



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
16.13 (min)	0.463
20.	1.24
25.	3.25
30.	6.61
35.	11.8
39.72 (max)	19.3

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
16.77 (min)	0.456
20.	1.71
25.	5.43
30.	11.4
31.94 (max)	15.5

RMS %  
 Error  
 5.92

Life Prediction Ratio Summary  

 0. .5 .8 1.25 2.

RMS %  
 Error  
 3.37

Life Prediction Ratio Summary  

 0. .5 .8 1.25 2.

Condition/Ht: -99

Form:

Specimen Type: CT

Orientation:

Stress Ratio: 0.05

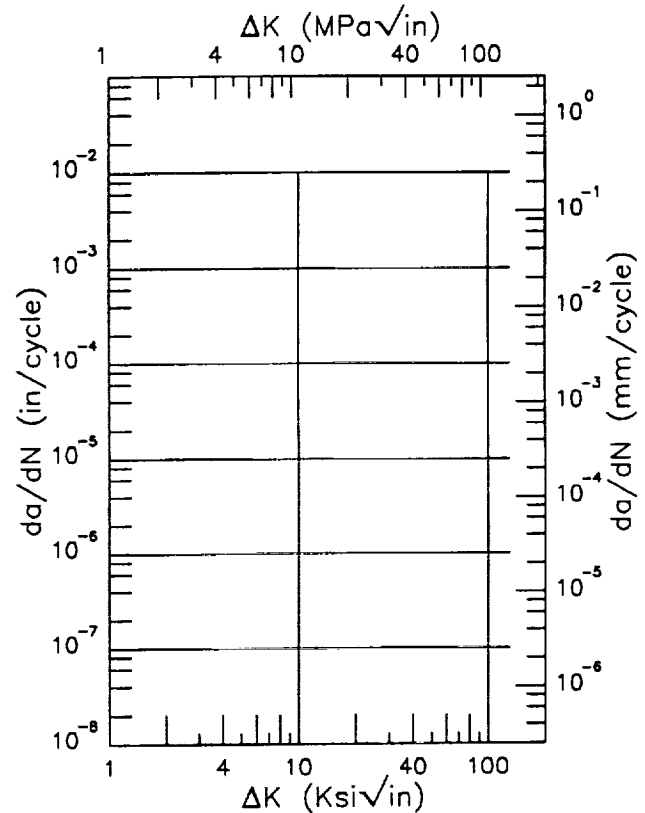
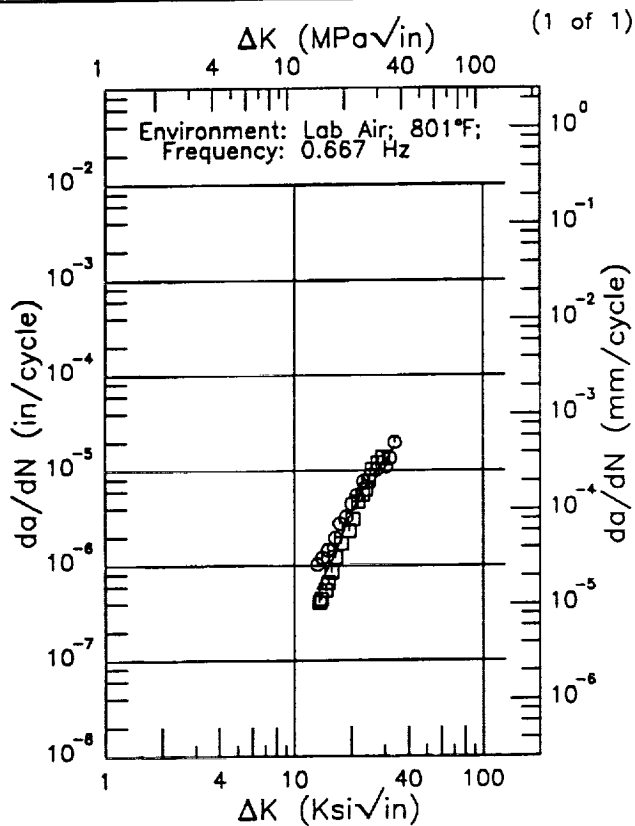
Yield Strength: 73.8 ksi

Ult. Strength: 104.3 ksi

Specimen Thk: 0.298 - 0.299 in.

Specimen Width: 1.154 in.

Ref: EPWHN

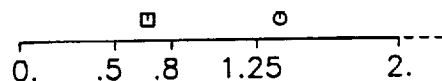


$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
13.15 (min)	0.561
16.	1.18
20.	3.64
25.	8.52
30.	12.3
33.69 (max)	17.9

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
--------------------------------------	-------------------------------

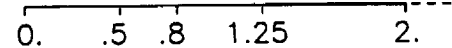
RMS %  
Error  
31.40

Life Prediction Ratio Summary



RMS %  
Error

Life Prediction Ratio Summary



# EF INCONEL 600

Condition/Ht: -99

Form:

Specimen Type: CT

Orientation:

Stress Ratio: 0.1

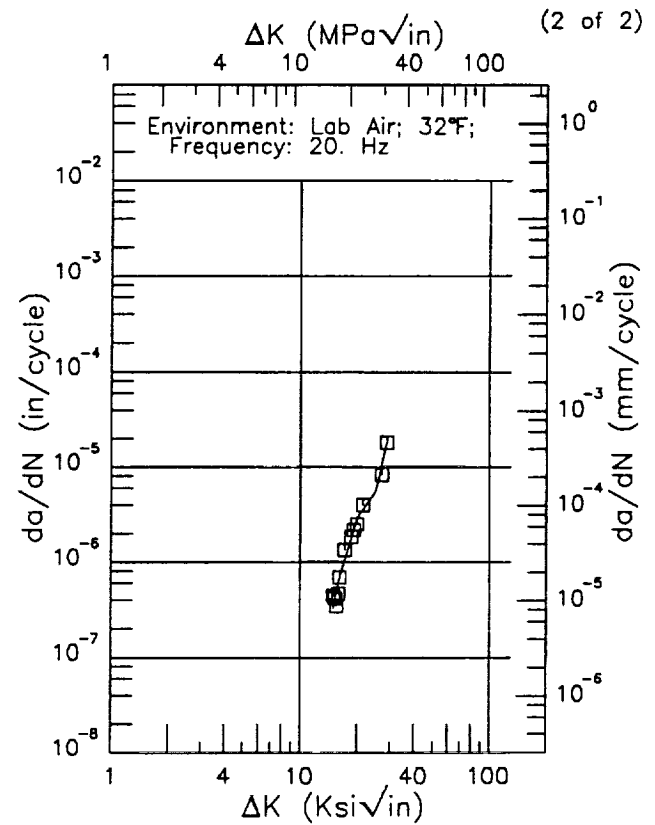
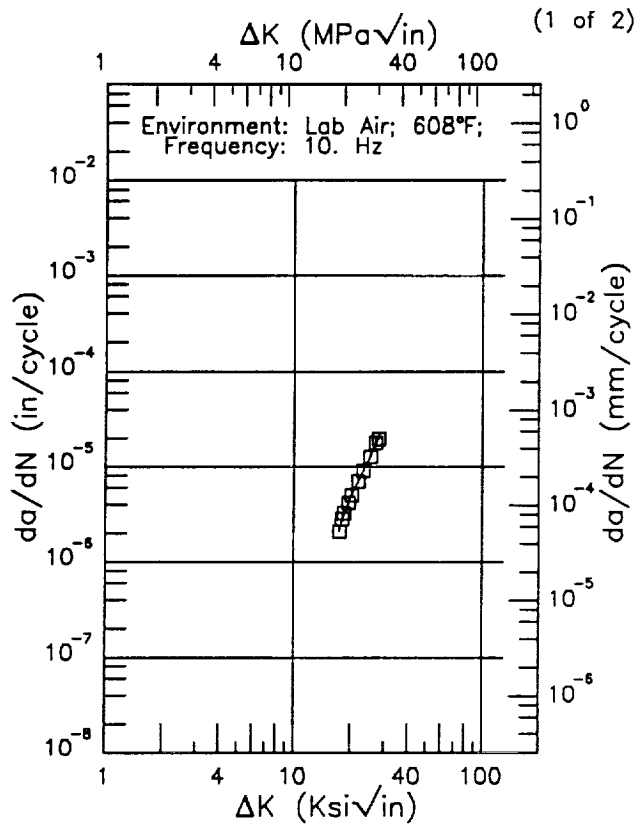
Yield Strength: 52.9 ksi

Ult. Strength: 92.2 ksi

Specimen Thk: 0.984 in.

Specimen Width: 1.969 in.

Ref: EPBER



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
17.33 (min)	2.20
20.	4.92
25.	12.3
28.05 (max)	20.1

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
14.87 (min)	0.323
16.	0.622
20.	2.92
25.	5.52
28.51 (max)	17.6

RMS %  
Error  
4.61

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS %  
Error  
18.53

Life Prediction Ratio Summary

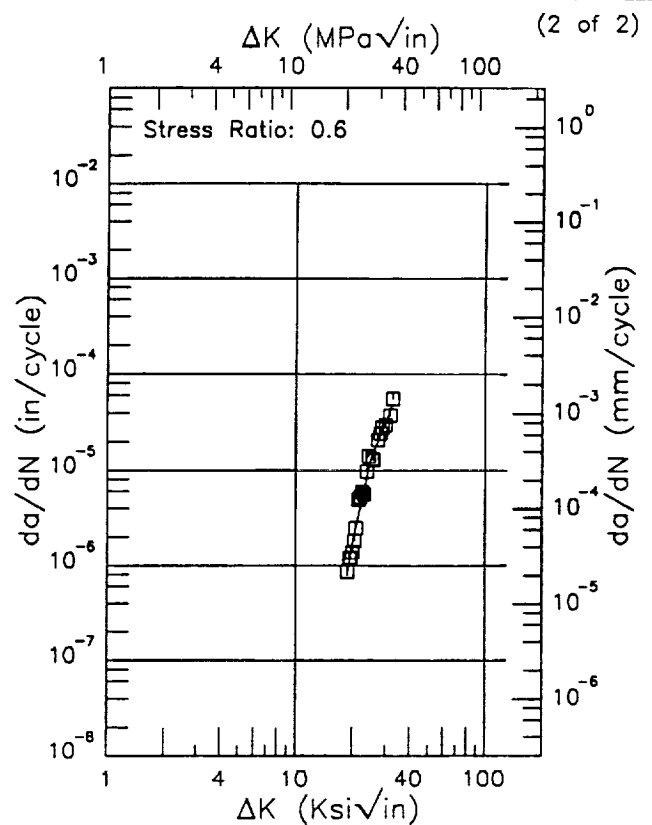
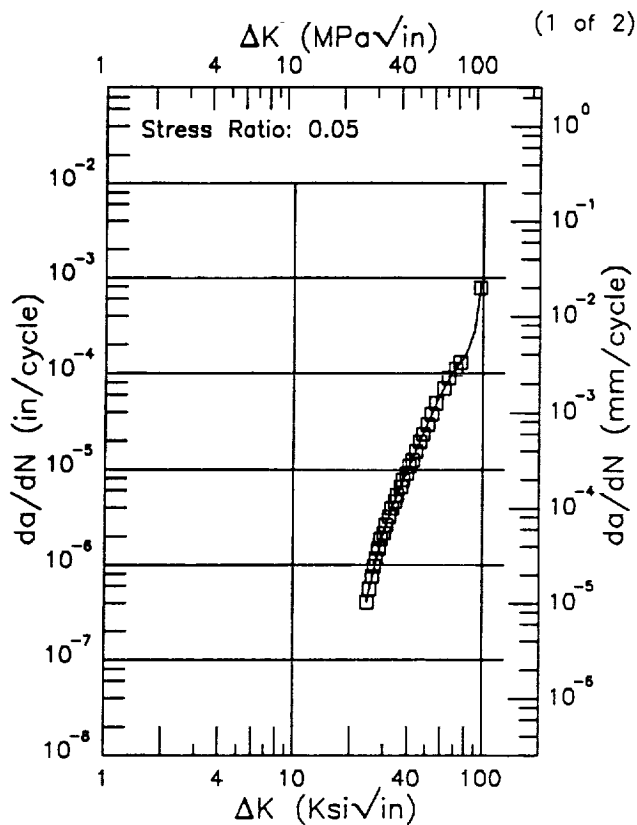
0. .5 .8 1.25 2.

D1-22

# R INCONEL 718

Condition/Ht: -99  
Form:  
Specimen Type: CT  
Orientation: L-T  
Frequency: 4 Hz  
Environment: HHA; RT

Yield Strength: 170 ksi  
Ult. Strength:  
Specimen Thk: 0.249 - 0.25 in.  
Specimen Width: 3 in.  
Ref: F22



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
24.62 (min)	0.425
25.	0.498
30.	2.19
35.	5.19
40.	9.62
50.	27.6
60.	62.6
70.	106.
80.	149.
90.	279.
96.33 (max)	781.

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
18.77 (min)	0.798
20.	1.75
25.	13.5
30.	31.4
32.32 (max)	48.5

RMS %  
Error  
4.27

Life Prediction Ratio Summary  
0. .5 .8 1.25 2. ---

RMS %  
Error  
19.31

Life Prediction Ratio Summary  
0. .5 .8 1.25 2. ---

Condition/Ht: -99

Form:

Specimen Type: CT

Orientation: L-T

Stress Ratio: 0.01

Frequency: 4 Hz

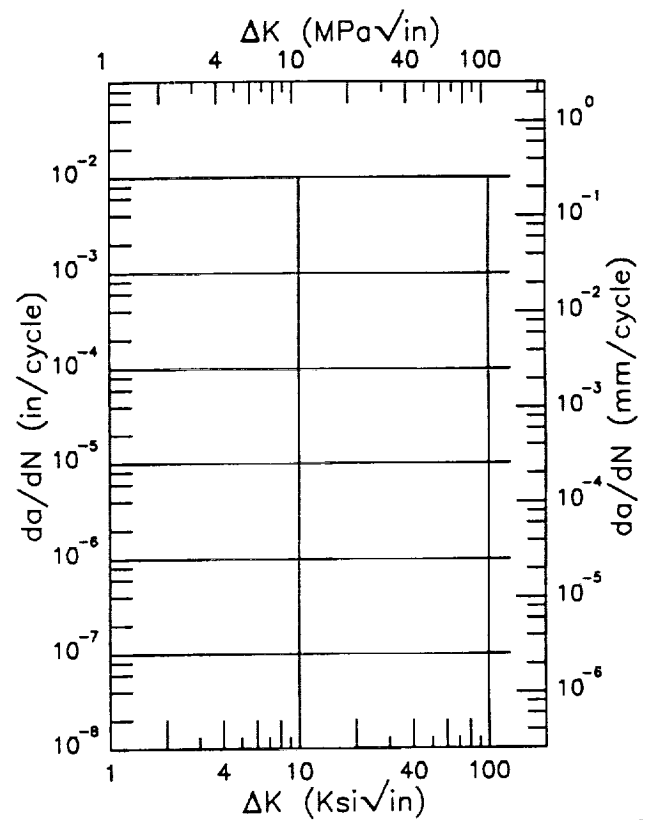
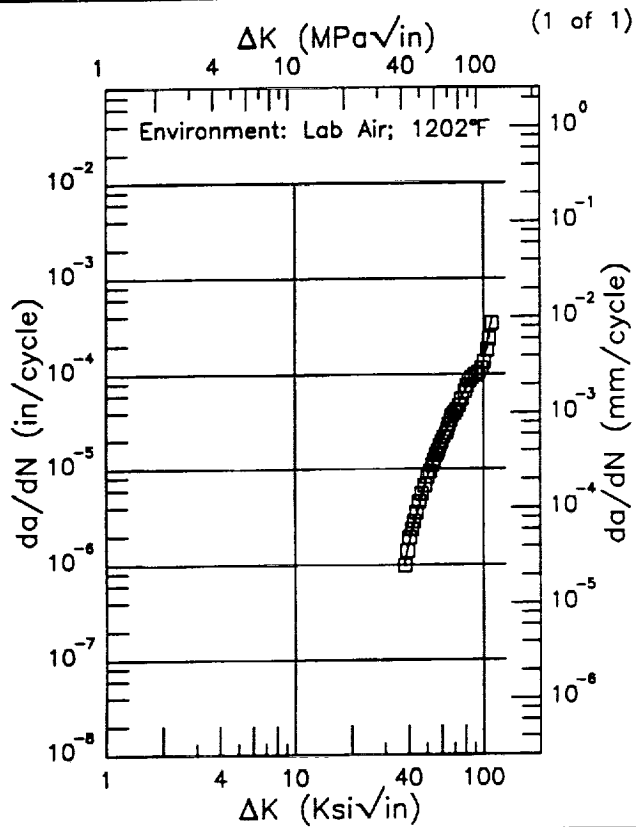
Yield Strength: 170 ksi

Ult. Strength:

Specimen Thk: 0.25 in.

Specimen Width: 2.999 in.

Ref: F22



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
38.10 (min)	1.02
40.	1.67
50.	7.94
60.	19.5
70.	40.1
80.	68.9
90.	99.2
100.	135.
109.91 (max)	352.

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
--------------------------------------	-----------------------------------

RMS %  
Error  
5.41

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

RMS %  
Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---



# E INCONEL 718

Condition/Ht: -99

Form:

Specimen Type: CT

Orientation: L-T

Stress Ratio: 0.05

Frequency: 4 Hz

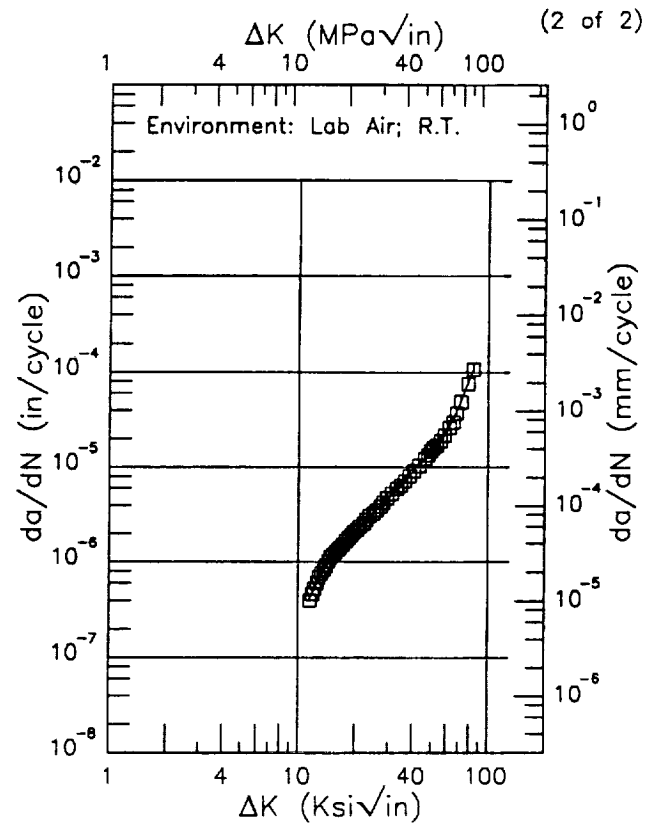
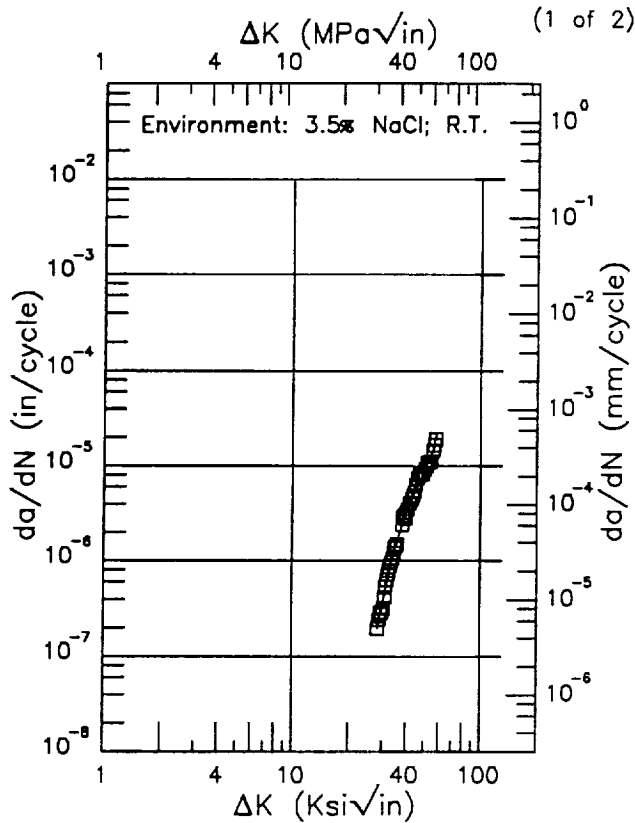
Yield Strength: 170 ksi

Ult. Strength:

Specimen Thk: 0.25 in.

Specimen Width: 2.999 - 3 in.

Ref: F22



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
28.34 (min)	0.195
30.	0.353
35.	1.37
40.	3.33
50.	9.17
57.43 (max)	17.2

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
11.53 (min)	0.430
13.	0.683
16.	1.29
20.	2.15
25.	3.32
30.	4.74
35.	6.61
40.	8.91
50.	14.4
60.	22.8
70.	42.8
80.	86.5
83.31 (max)	107.

RMS %  
Error

9.62

Life Prediction Ratio Summary

0. .5 .8 1.25 2.---

RMS %  
Error

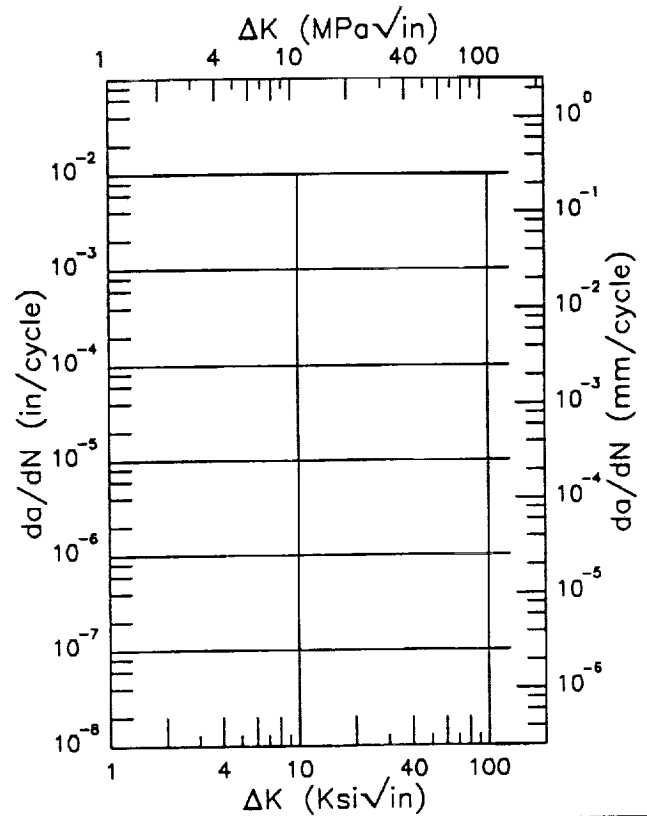
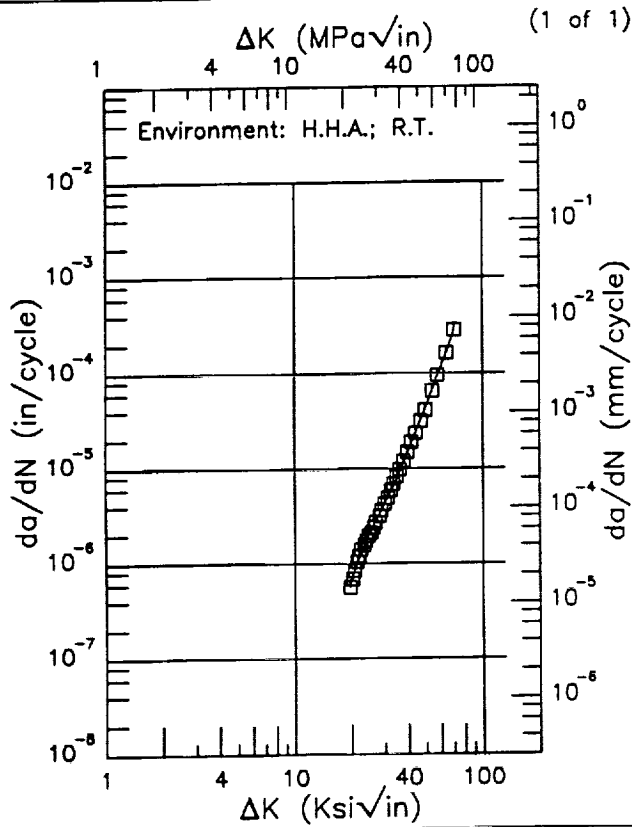
3.07

Life Prediction Ratio Summary

0. .5 .8 1.25 2.---

Condition/Ht: -99  
Form:  
Specimen Type: CT  
Orientation: T-L  
Stress Ratio: 0.05  
Frequency: 4 Hz

Yield Strength: 170 ksi  
Ult. Strength:  
Specimen Thk: 0.25 in.  
Specimen Width: 2.998 in.  
Ref: F22



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
19.57 (min)	0.613
20.	0.702
25.	2.11
30.	4.30
35.	8.21
40.	15.4
50.	45.1
60.	116.
70.	273.
70.24 (max)	278.

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
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RMS %  
Error  
4.83

Life Prediction Ratio Summary

0. .5 .8 1.25 2.---

RMS %  
Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.---

# E INCONEL 718

Condition/Ht: -99

Form:

Specimen Type: CT

Orientation: S-L

Stress Ratio: 0.05

Frequency: 4 Hz

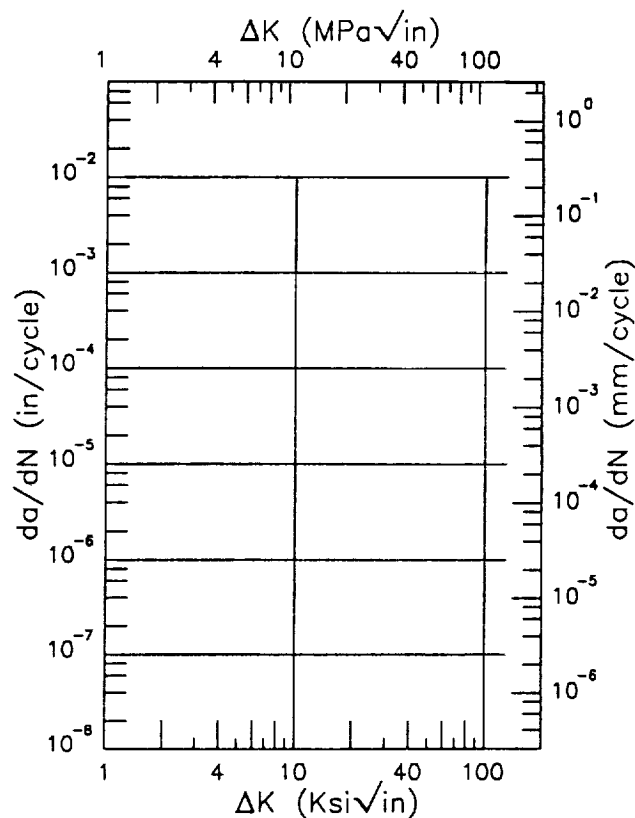
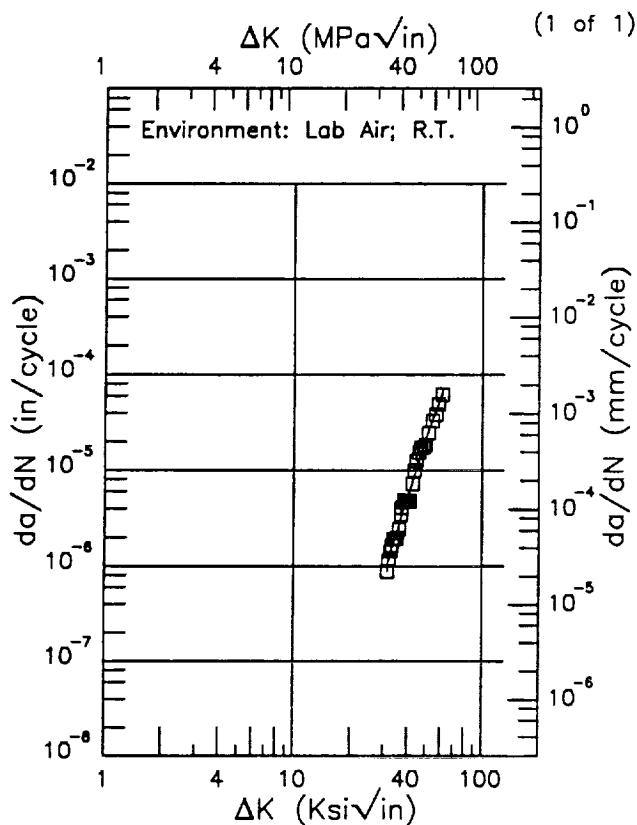
Yield Strength: 170 ksi

Ult. Strength:

Specimen Thk: 0.25 in.

Specimen Width: 3 in.

Ref: F22



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
31.25 (min)	0.988
35.	2.25
40.	5.26
50.	21.7
60.	56.4
61.02 (max)	64.1

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
--------------------------------------	-----------------------------------

RMS %  
Error  
12.78

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

RMS %  
Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

Condition/Ht: -99

Form:

Specimen Type: CCP (max load specified)

Orientation: L-T

Stress Ratio:

Environment: HHA; RT

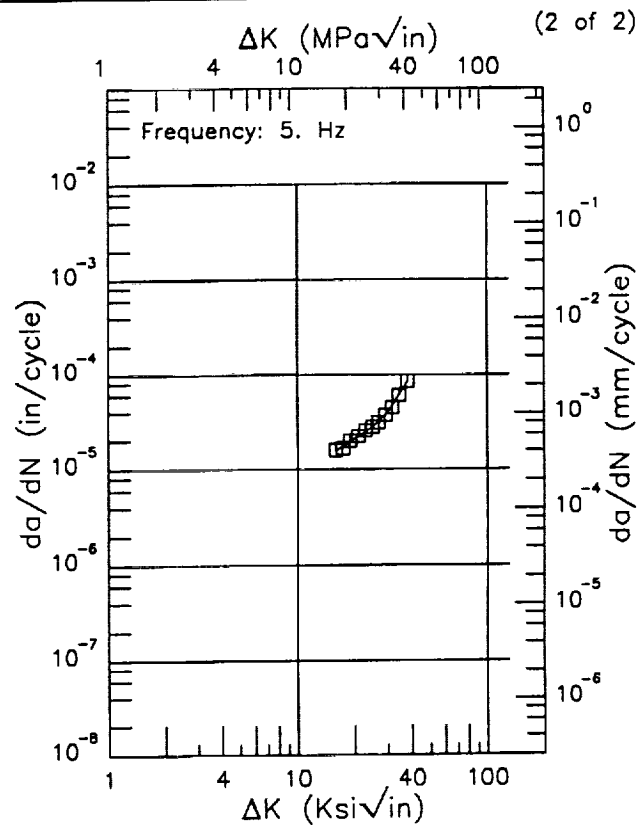
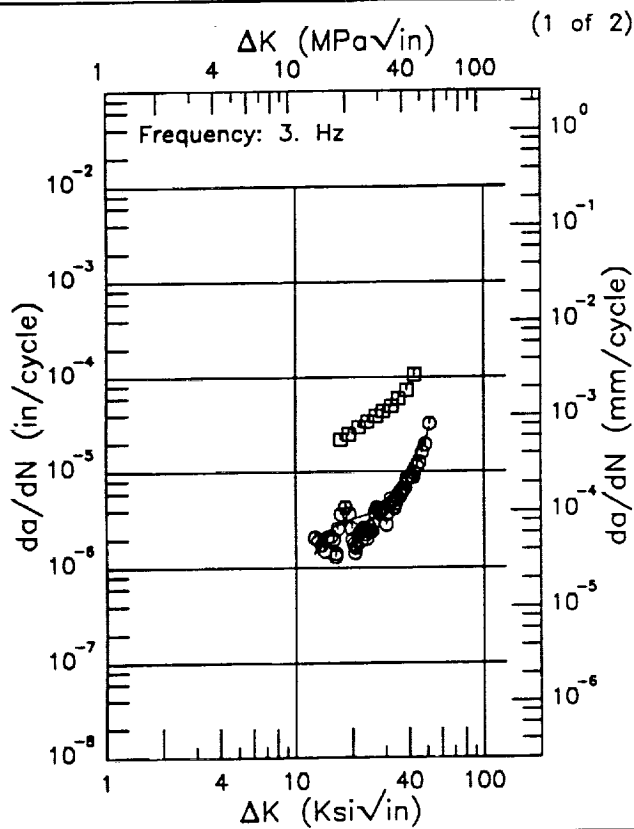
Yield Strength:

Ult. Strength:

Specimen Thk: 0.297 - 0.306 in.

Specimen Width: 2.999 - 3.001 in.

Ref: F22



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
12.57 (min)	1.40
13.	1.60
16.	2.71
20.	3.24
25.	3.69
30.	4.89
35.	7.73
40.	11.7
50.	24.0
51.14 (max)	29.4

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
15.84 (min)	15.5
16.	15.6
20.	21.0
25.	28.0
30.	40.1
35.	64.9
38.01 (max)	85.5

RMS %  
Error  
>100.0

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS %  
Error  
2.26

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

R

## INCONEL X-750

Condition/Ht: -99

Form: Plate

Specimen Type: CT

Orientation:

Frequency: 6.7 - 6.7 Hz

Environment: LAB AIR; 1000°F

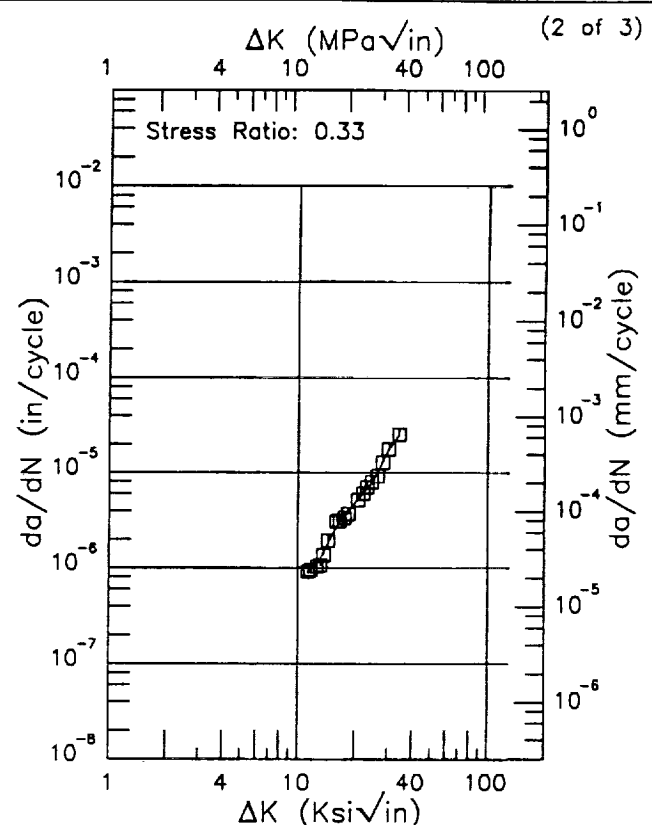
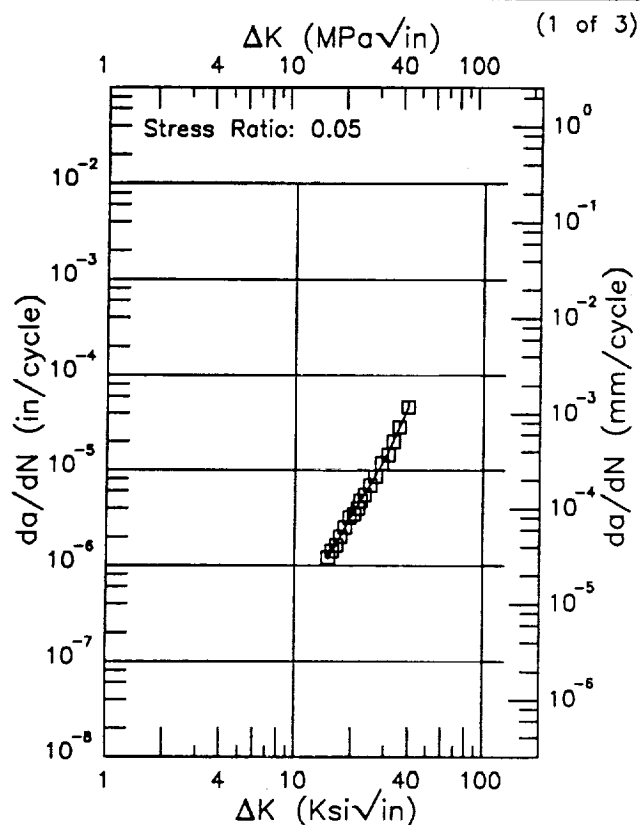
Yield Strength: 92.8 ksi

Ult. Strength: 136.2 ksi

Specimen Thk: 0.299 - 0.303 in.

Specimen Width: 1.154 in.

Ref: EPWHN



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
14.94 (min)	1.19
16.	1.50
20.	3.30
25.	6.98
30.	13.1
35.	26.2
39.64 (max)	46.4

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	da/dN (10 <sup>-6</sup> in/cycle)
11.29 (min)	0.875
13.	1.18
16.	2.67
20.	4.78
25.	8.20
30.	17.2
34.01 (max)	25.0

RMS %  
Error  
3.68

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS %  
Error  
6.22

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

Condition/Ht: -99

Form: Plate

Specimen Type: CT

Orientation:

Frequency: 6.7 - 6.7 Hz

Environment: LAB AIR;1000°F

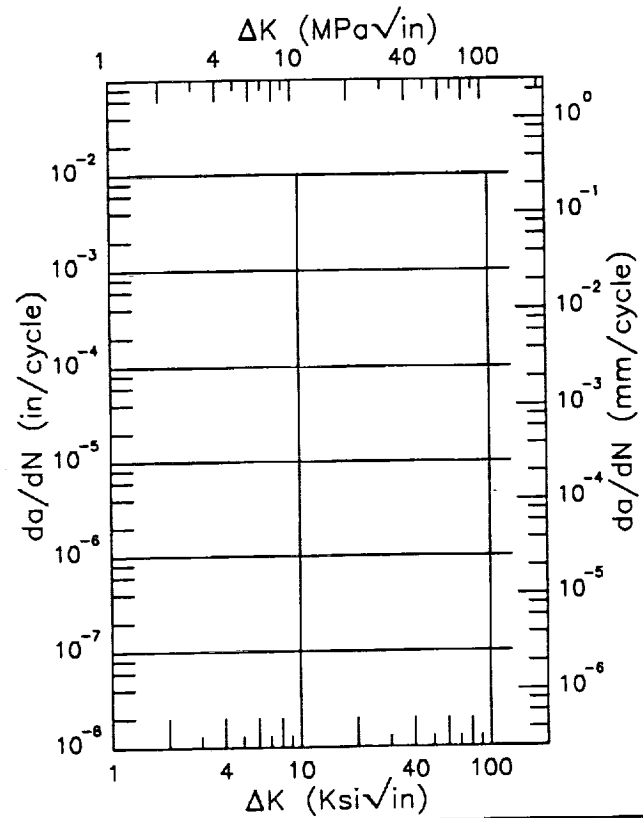
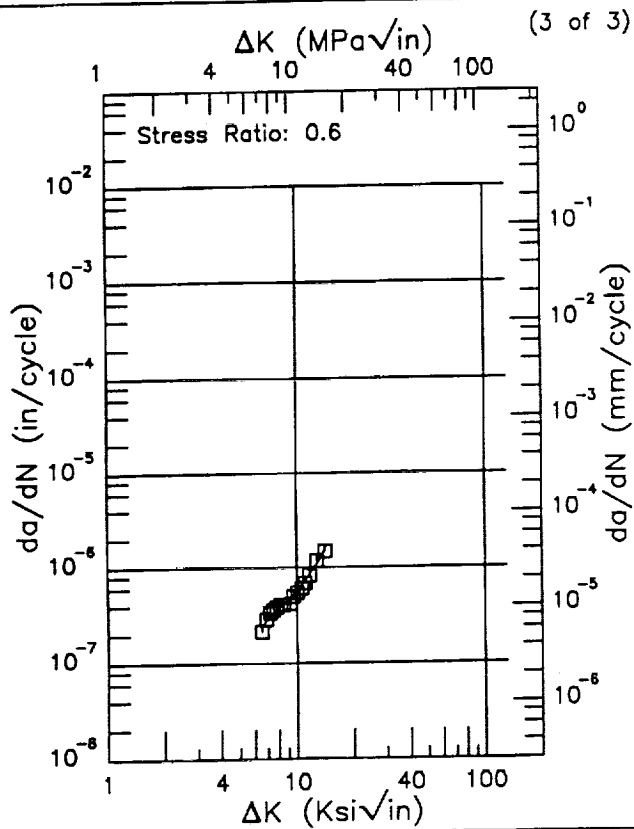
Yield Strength: 92.8 ksi

Ult. Strength: 136.2 ksi

Specimen Thk: 0.299 - 0.303 in.

Specimen Width: 1.154 in.

Ref: EPWHN



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
6.51 (min)	0.245
7.	0.290
8.	0.374
9.	0.458
10.	0.557
13.	1.15
14.08 (max)	1.62

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
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RMS %  
Error  
7.10

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS %  
Error

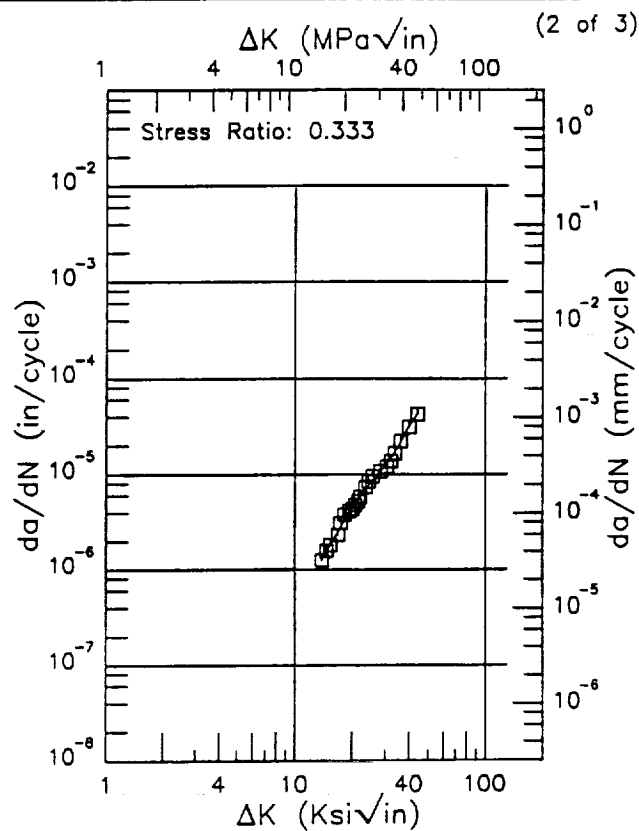
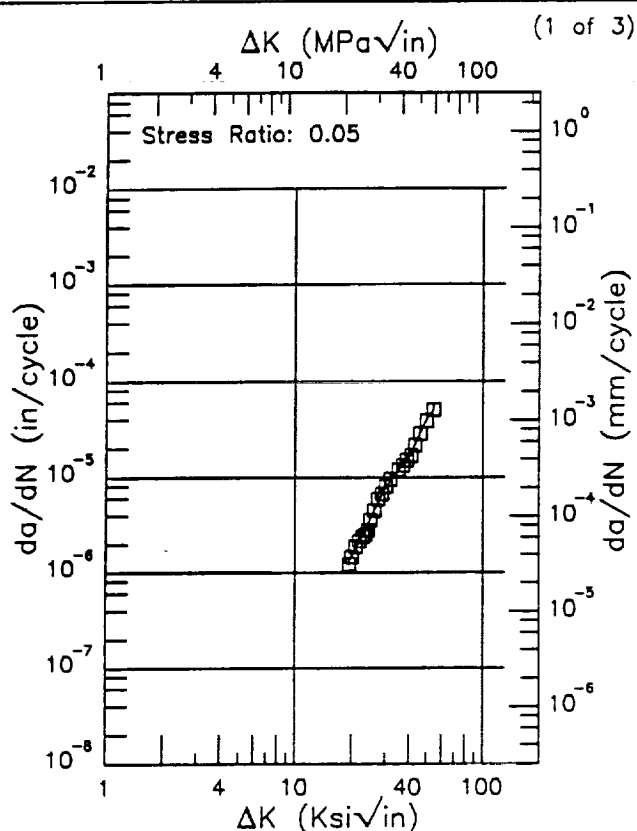
Life Prediction Ratio Summary

0. .5 .8 1.25 2.

# R INCONEL X-750

Condition/Ht: -99  
Form: Plate  
Specimen Type: CT  
Orientation:  
Frequency: 6.7 - 6.7 Hz  
Environment: LAB AIR;1000°F

Yield Strength: 92.8 ksi  
Ult. Strength: 136.2 ksi  
Specimen Thk: 0.421 - 0.423 in.  
Specimen Width: 1.995 - 2.005 in.  
Ref: EPWHN



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
19.19 (min)	1.37
20.	1.50
25.	3.72
30.	7.76
35.	11.7
40.	16.2
50.	40.4
53.95 (max)	49.4

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
13.83 (min)	1.27
16.	2.07
20.	4.52
25.	8.37
30.	12.1
35.	19.2
40.	32.3
43.94 (max)	41.5

RMS %  
Error  
6.11

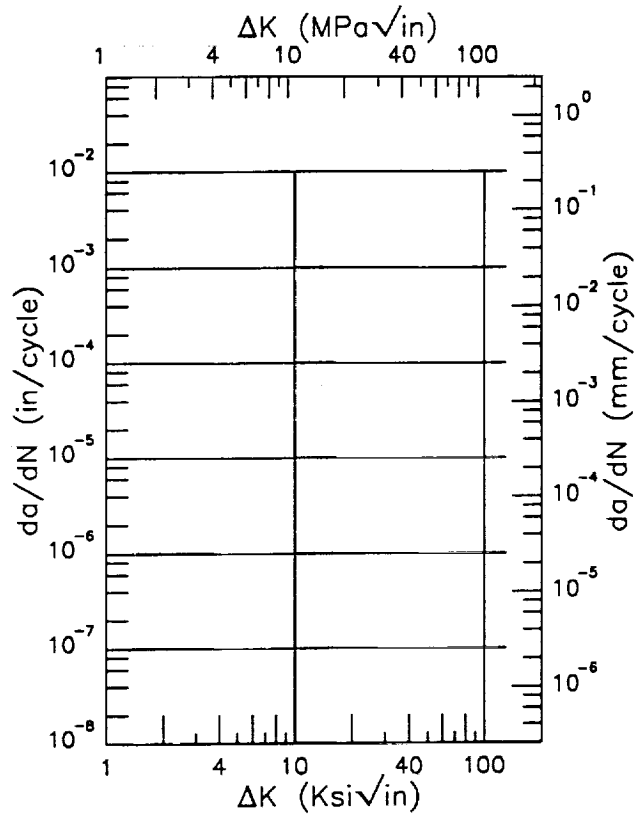
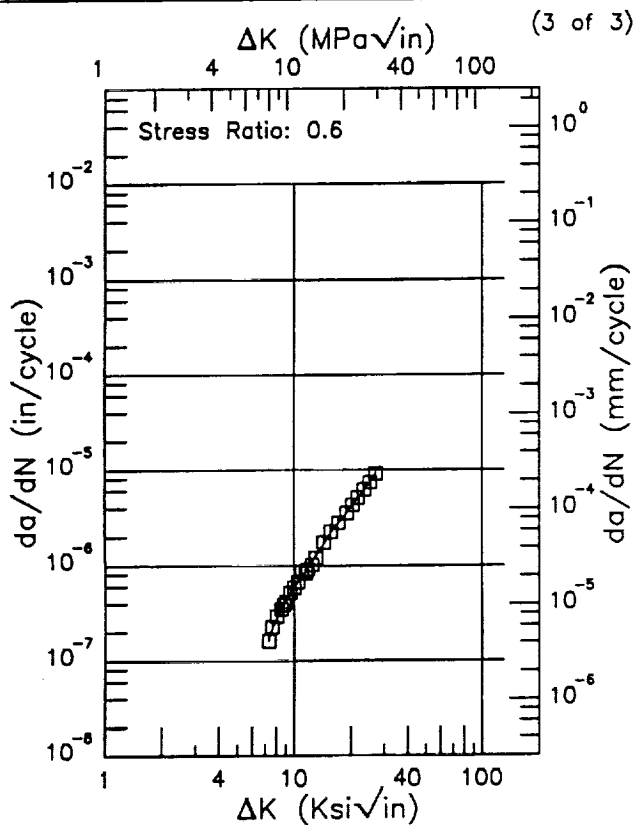
Life Prediction Ratio Summary  
0. 0.5 .8 1.25 2.0

RMS %  
Error  
5.44

Life Prediction Ratio Summary  
0. 0.5 .8 1.25 2.0

Condition/Ht: -99  
 Form: Plate  
 Specimen Type: CT  
 Orientation:  
 Frequency: 6.7 - 6.7 Hz  
 Environment: LAB AIR;1000°F

Yield Strength: 92.8 ksi  
 Ult. Strength: 136.2 ksi  
 Specimen Thk: 0.421 - 0.423 in.  
 Specimen Width: 1.995 - 2.005 in.  
 Ref: EPWHN



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
7.30 (min)	0.174
8.	0.271
9.	0.426
10.	0.590
13.	1.25
16.	2.36
20.	4.06
25.	7.28
26.99 (max)	8.89

$\Delta K$  (Ksi√in)       $da/dN$  ( $10^{-6}$  in/cycle)

RMS %  
 Error  
 4.43

Life Prediction Ratio Summary  

 0. .5 .8 1.25 2.

RMS %  
 Error

Life Prediction Ratio Summary  

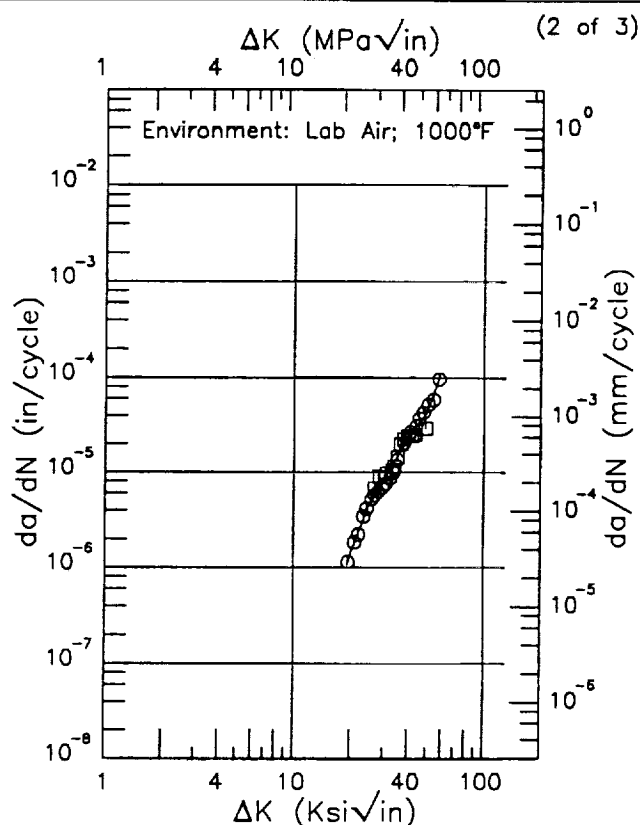
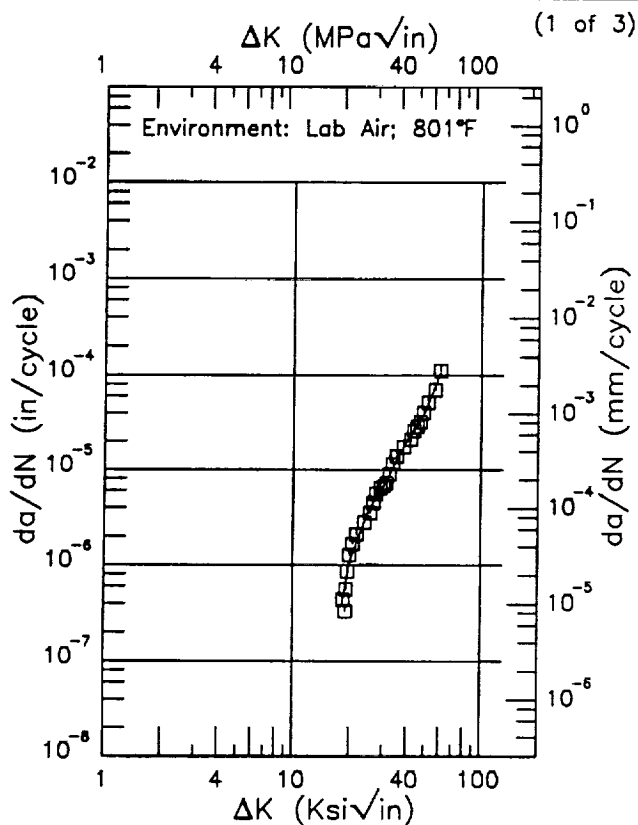
 0. .5 .8 1.25 2.



# E INCONEL X-750

Condition/Ht: -99  
Form: Plate  
Specimen Type: CT  
Orientation:  
Stress Ratio: 0.05  
Frequency: 0.7 Hz

Yield Strength: 92.8 ksi  
Ult. Strength: 136.2 ksi  
Specimen Thk: 0.417 - 0.421 in.  
Specimen Width: 1.992 - 2.008 in.  
Ref: EPWHN



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
18.33 (min)	0.395
20.	1.07
25.	3.75
30.	6.63
35.	12.4
40.	20.3
50.	40.7
60.	104.
60.22 (max)	106.

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
19.30 (min)	1.06
20.	1.40
25.	4.48
30.	8.37
35.	14.6
40.	23.1
50.	43.8
57.66 (max)	96.6

RMS %  
Error  
14.63

Life Prediction Ratio Summary

0. .5 .8 1.25 2.---

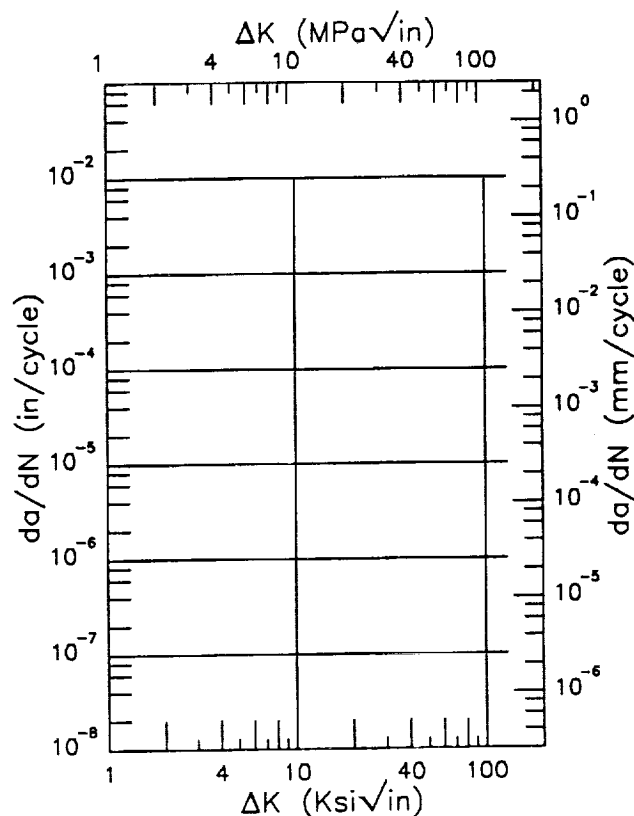
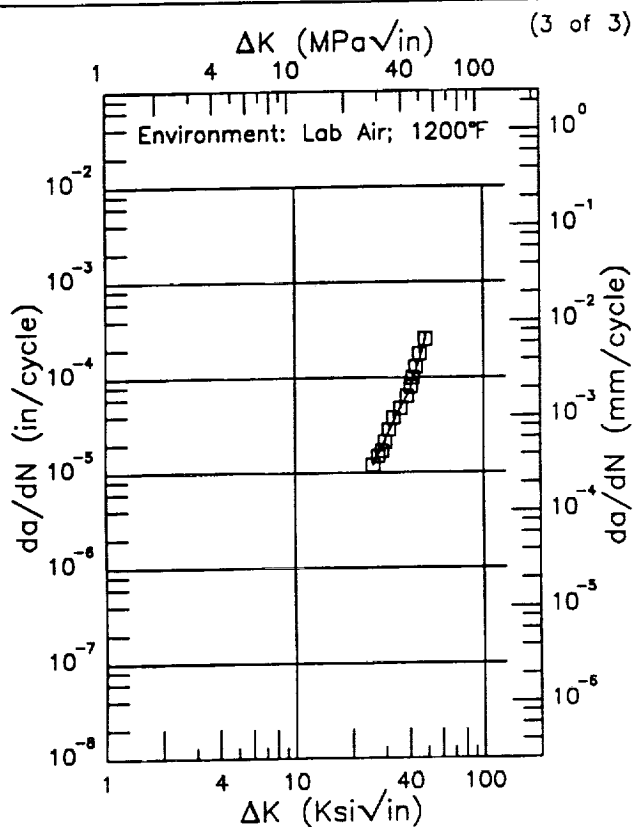
RMS %  
Error  
12.53

Life Prediction Ratio Summary

0. .5 .8 1.25 2.---

Condition/Ht: -99  
Form: Plate  
Specimen Type: CT  
Orientation:  
Stress Ratio: 0.05  
Frequency: 0.7 Hz

Yield Strength: 92.8 ksi  
Ult. Strength: 136.2 ksi  
Specimen Thk: 0.417 - 0.421 in.  
Specimen Width: 1.992 - 2.008 in.  
Ref: EPWHN



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
25.78 (min)	12.1
30.	22.2
35.	44.6
40.	70.9
48.89 (max)	250.

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
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RMS %  
Error  
6.21

Life Prediction Ratio Summary  
0. .5 .8 1.25 2.

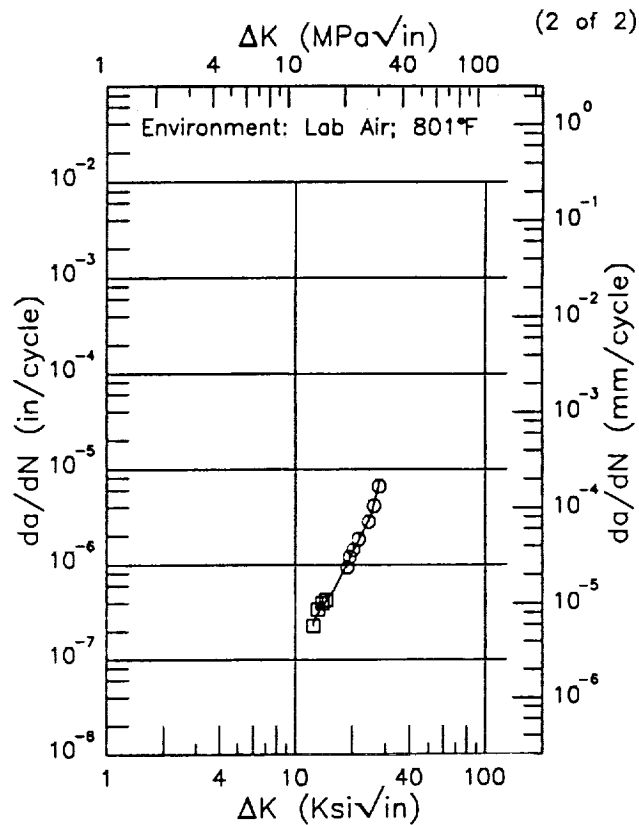
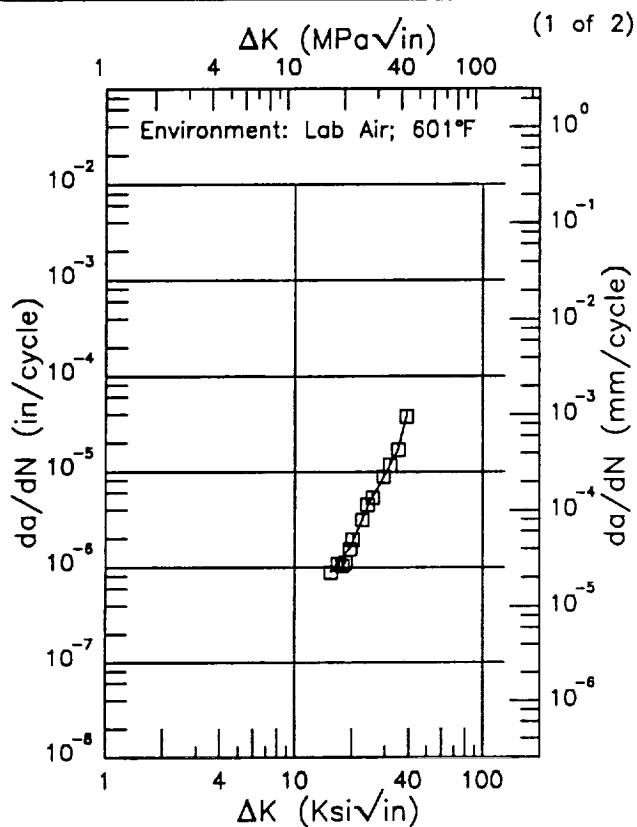
RMS %  
Error

Life Prediction Ratio Summary  
0. .5 .8 1.25 2.

# E INCONEL X-750

Condition/Ht: -99  
 Form: Plate  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.05  
 Frequency: 0.7 Hz

Yield Strength: 92.8 ksi  
 Ult. Strength: 136.2 ksi  
 Specimen Thk: 0.303 in.  
 Specimen Width: 1.154 - 1.157 in.  
 Ref: EPWHN



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
15.42 (min)	0.904
16.	0.911
20.	1.72
25.	4.93
30.	9.24
35.	16.6
38.95 (max)	36.8

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
12.46 (min)	0.242
13.	0.302
16.	0.536
20.	1.31
25.	3.21
27.48 (max)	6.72

RMS %  
 Error  
 7.96

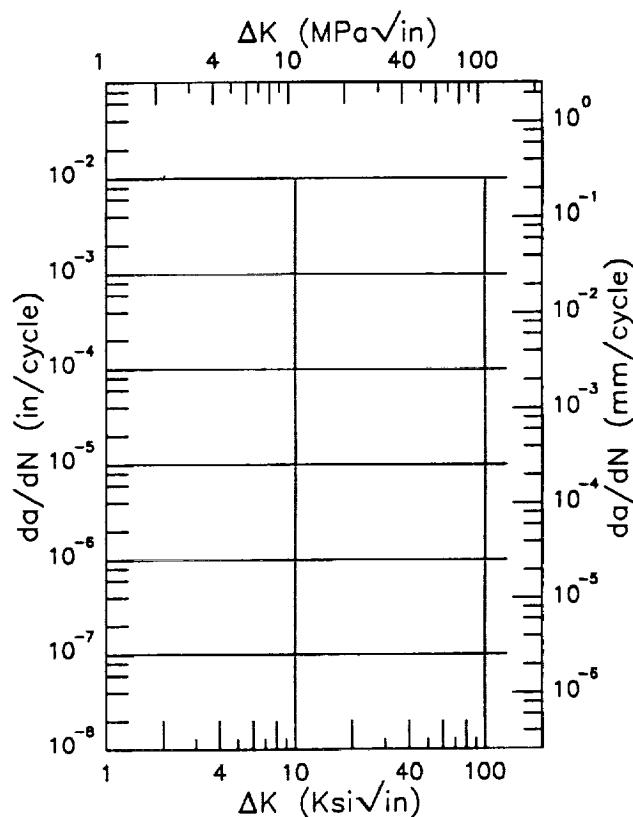
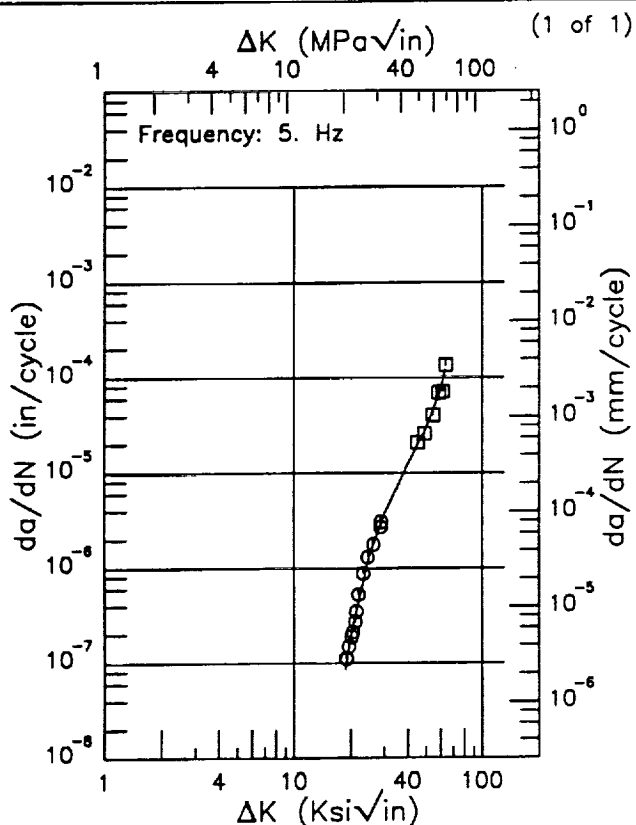
Life Prediction Ratio Summary  
  
 0. .5 .8 1.25 2.

RMS %  
 Error  
 5.81

Life Prediction Ratio Summary  
  
 0. .5 .8 1.25 2.

Condition/Ht: -99  
 Form: Plate  
 Specimen Type: CT  
 Orientation:  
 Stress Ratio: 0.05  
 Environment: LAB AIR; RT

Yield Strength: 92.8 ksi  
 Ult. Strength: 136.2 ksi  
 Specimen Thk: 0.421 in.  
 Specimen Width: 2.004 in.  
 Ref: EPWHN



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
18.76 (min)	0.0876
20.	0.195
25.	1.39
30.	3.69
35.	7.18
40.	12.7
50.	29.7
60.	74.3
63.17 (max)	120.

$\Delta K$  (Ksi√in)  $da/dN$  ( $10^{-6}$  in/cycle)

RMS %  
 Error  
 12.18

Life Prediction Ratio Summary  

 0. .5 .8 1.25 2.

RMS %  
 Error

Life Prediction Ratio Summary  

 0. .5 .8 1.25 2.

# E | INCONEL X-750 |

Condition/Ht: -99

Form:

Specimen Type: CT

Orientation:

Stress Ratio: 0.05

Frequency: 0.7 Hz

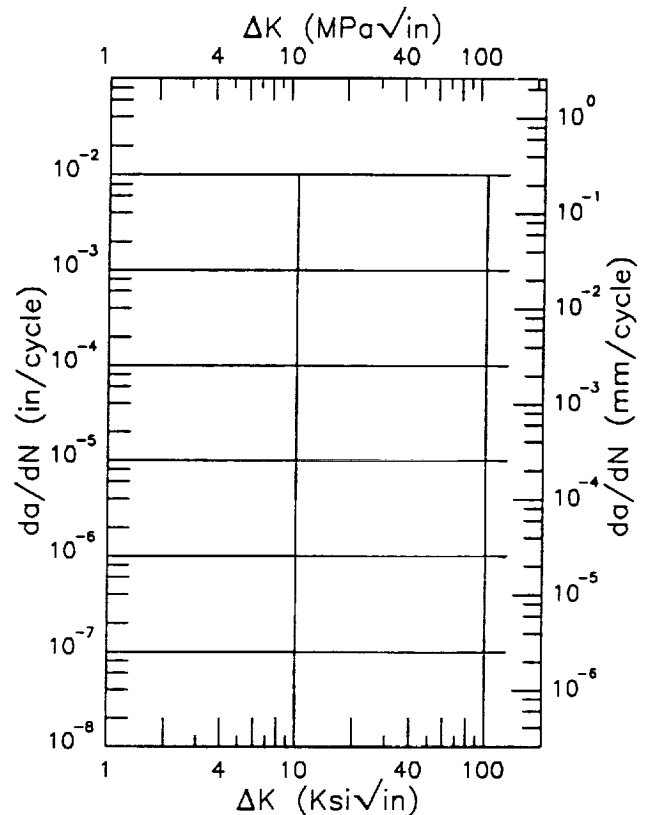
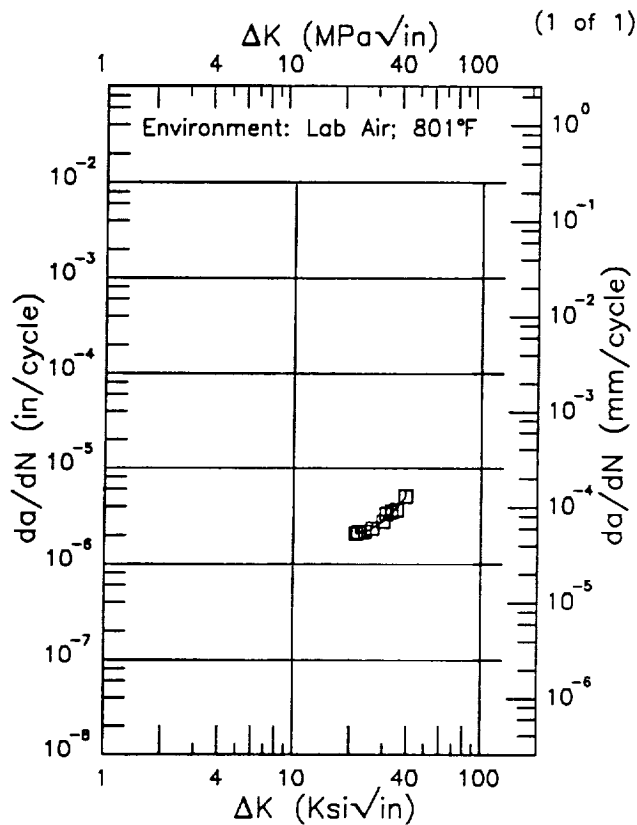
Yield Strength: 125.3 ksi

Ult. Strength: 142.1 ksi

Specimen Thk: 0.3 in.

Specimen Width: 1.154 in.

Ref: EPWHN



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
21.37 (min)	2.11
25.	2.26
30.	2.86
35.	3.84
39.24 (max)	4.94

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
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RMS %  
Error  
4.02

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

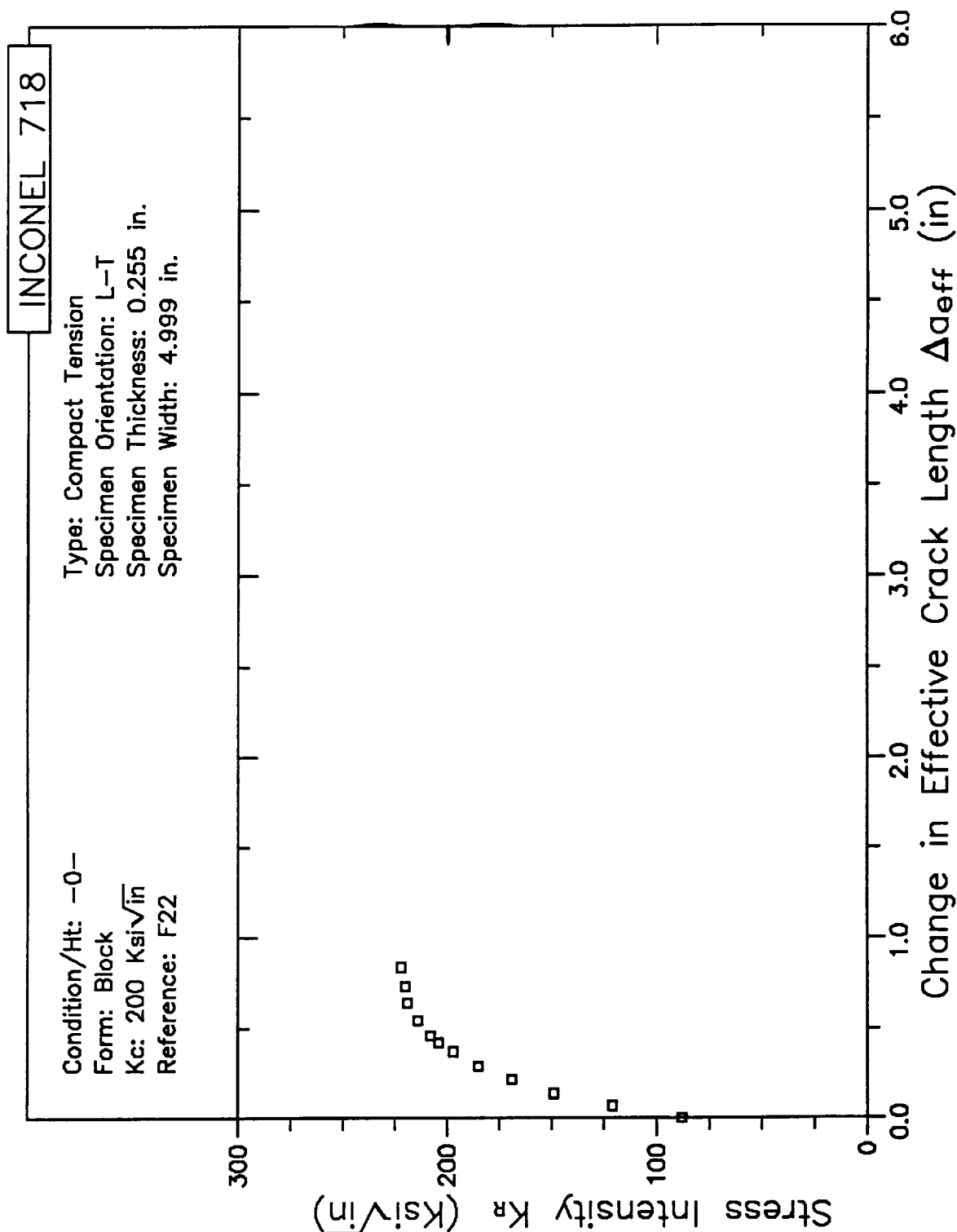
RMS %  
Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

D1-38

# RESISTANCE CURVE



D2-1

PAGE D1-38 INTENTIONALLY BLANK

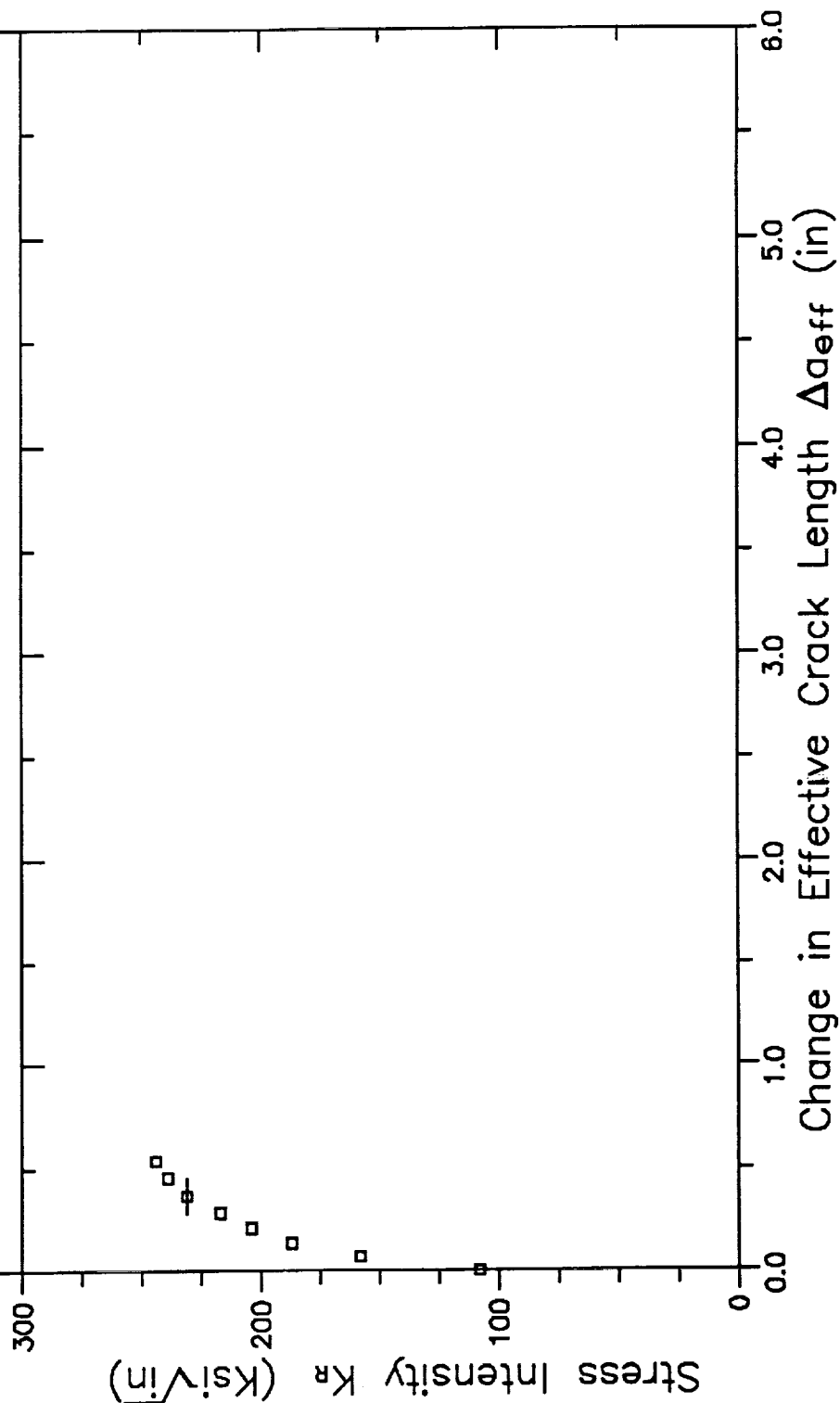
PREVIOUS PAGE BLANK NOT FILMED

# RESISTANCE CURVE

INCONEL 718

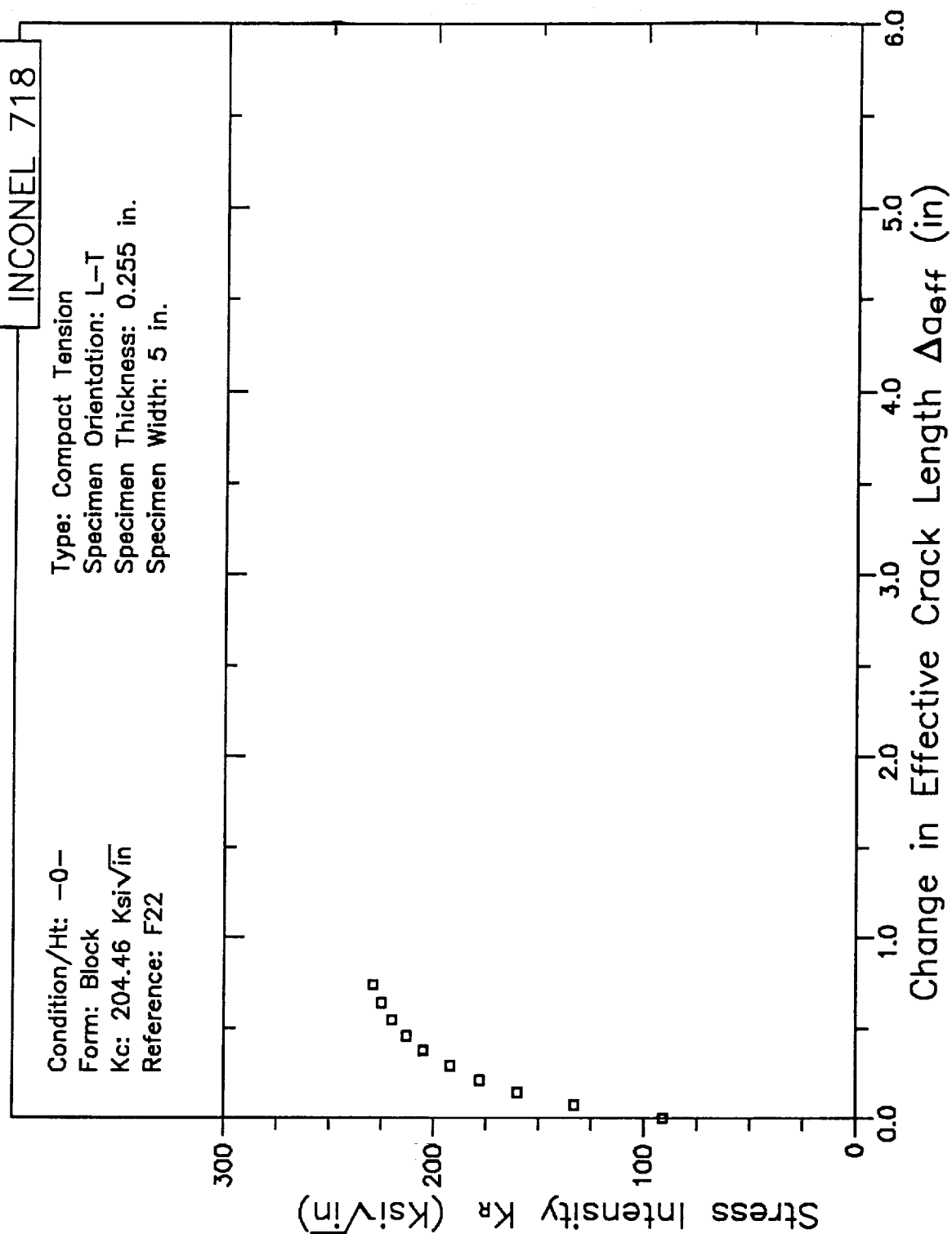
Condition/Ht: -0-  
Form: Block  
Kc: 229.4 Ksi√in  
Reference: F22

Type: Compact Tension  
Specimen Orientation: L-T  
Specimen Thickness: 0.255 in.  
Specimen Width: 5 in.





# RESISTANCE CURVE

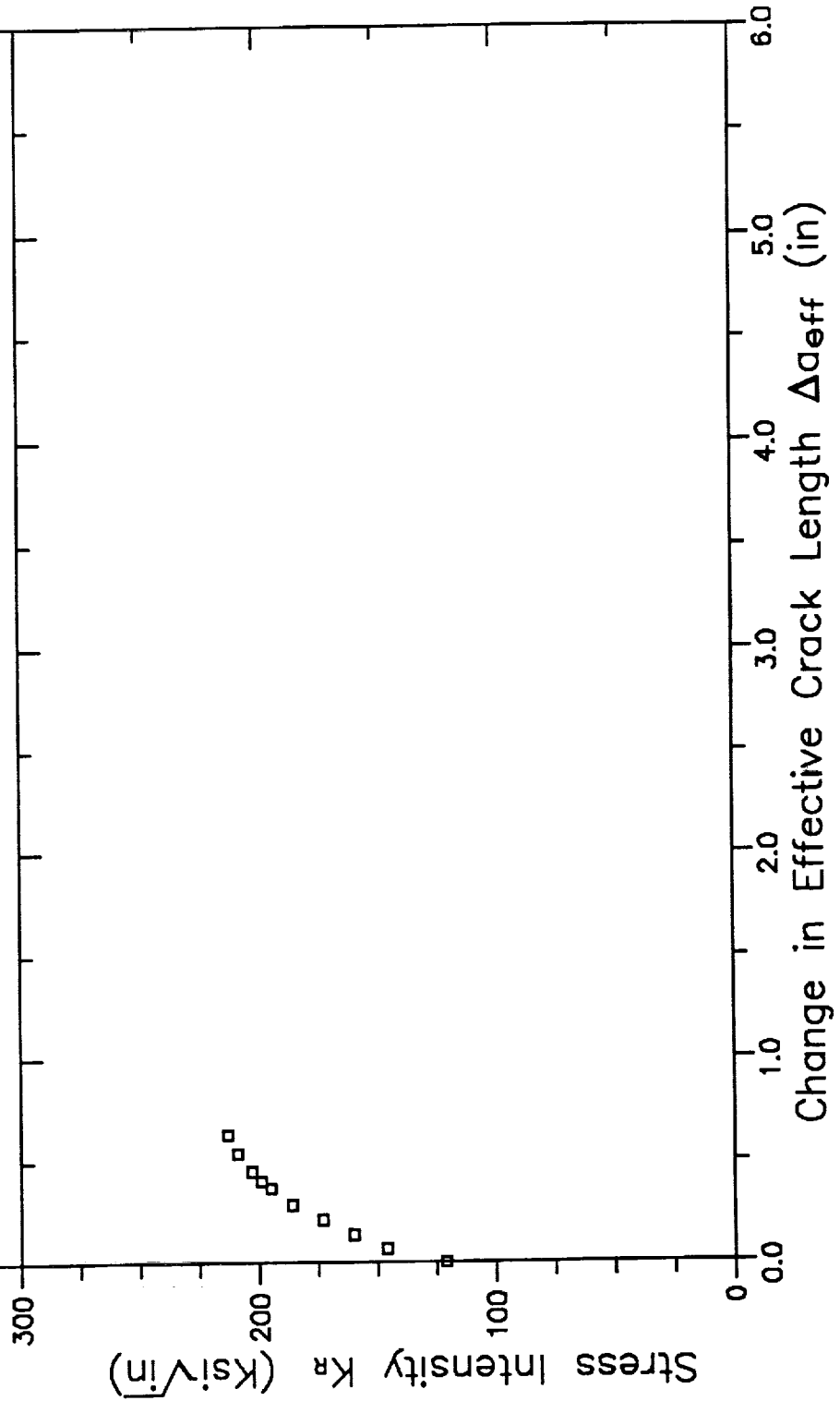


# RESISTANCE CURVE

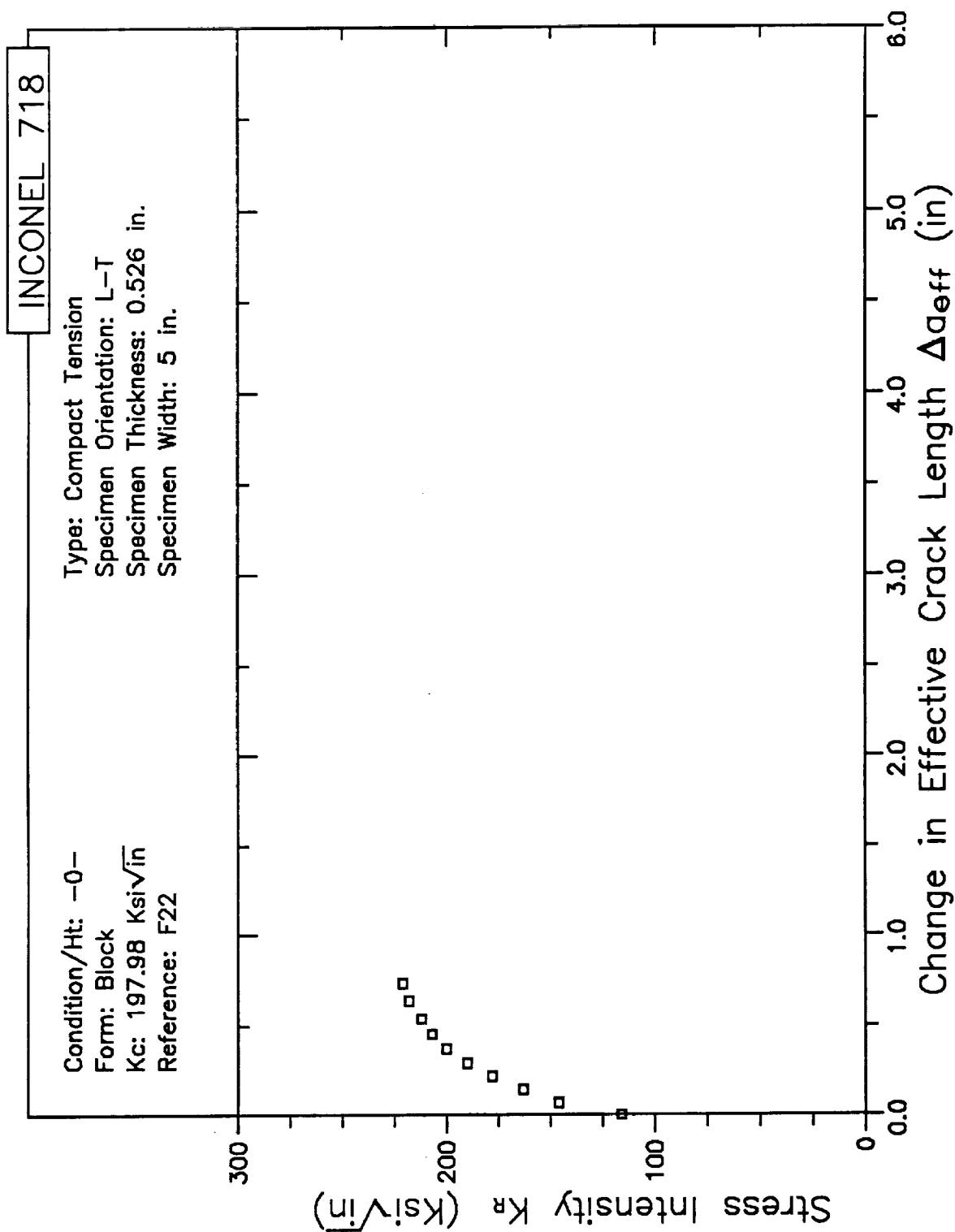
INCONEL 718

Condition/Ht: -0-  
Form: Block  
Kc: 193.88 Ksi√in  
Reference: F22

Type: Compact Tension  
Specimen Orientation: L-T  
Specimen Thickness: 0.525 in.  
Specimen Width: 5 in.



# RESISTANCE CURVE

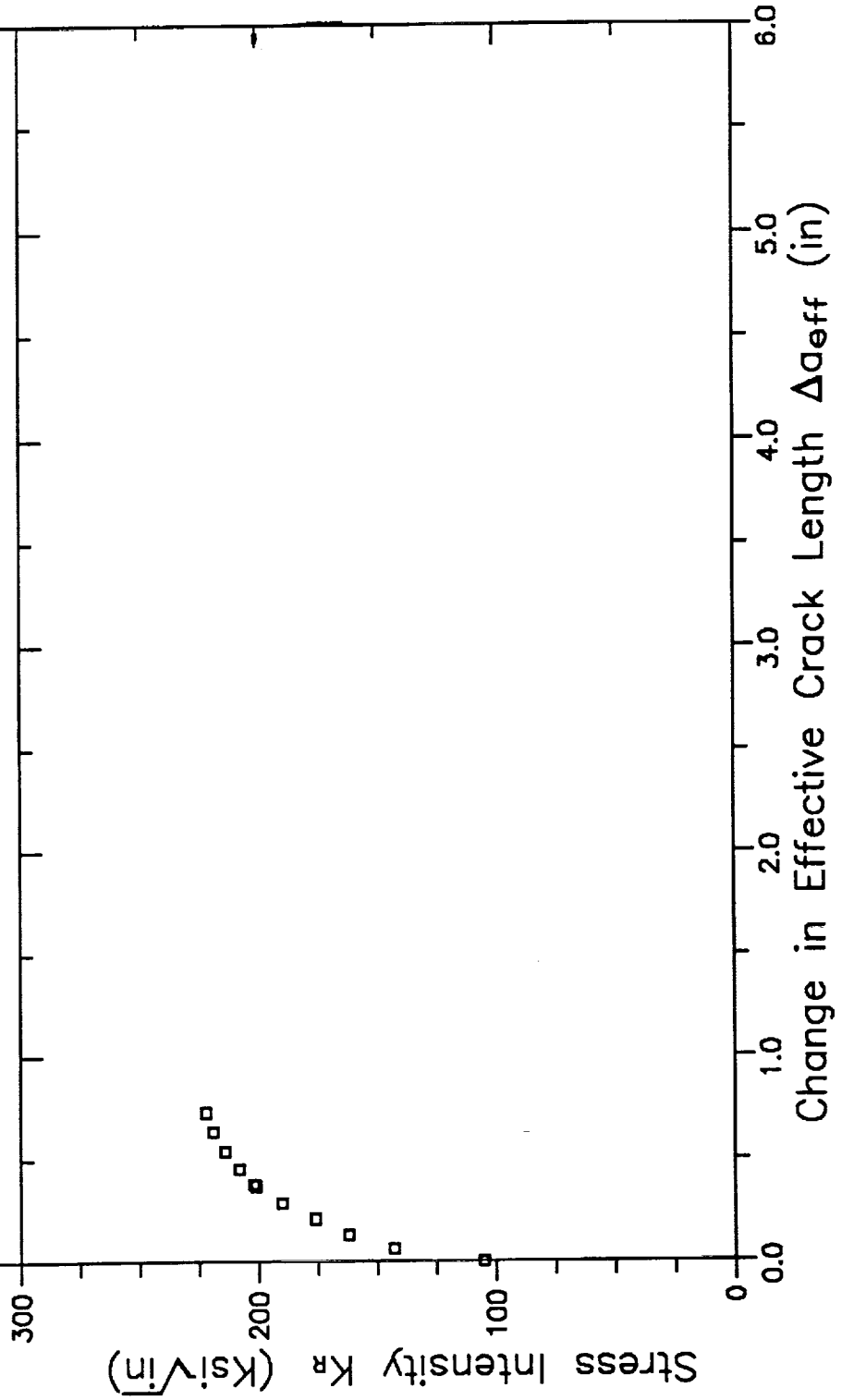


# RESISTANCE CURVE

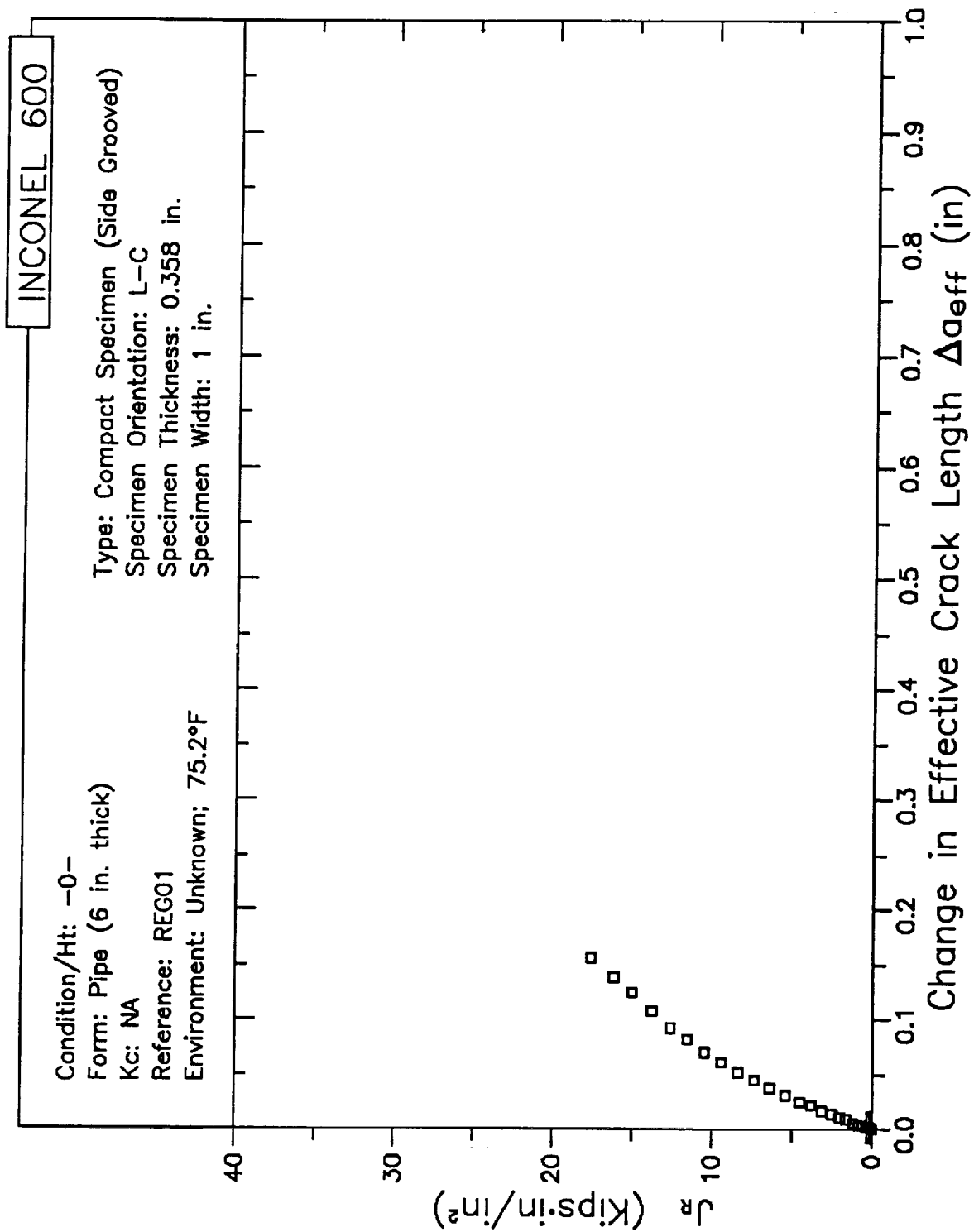
INCONEL 718

Condition/Ht: -0-  
Form: Block  
Kc: 199.01 Ksi√in  
Reference: F22

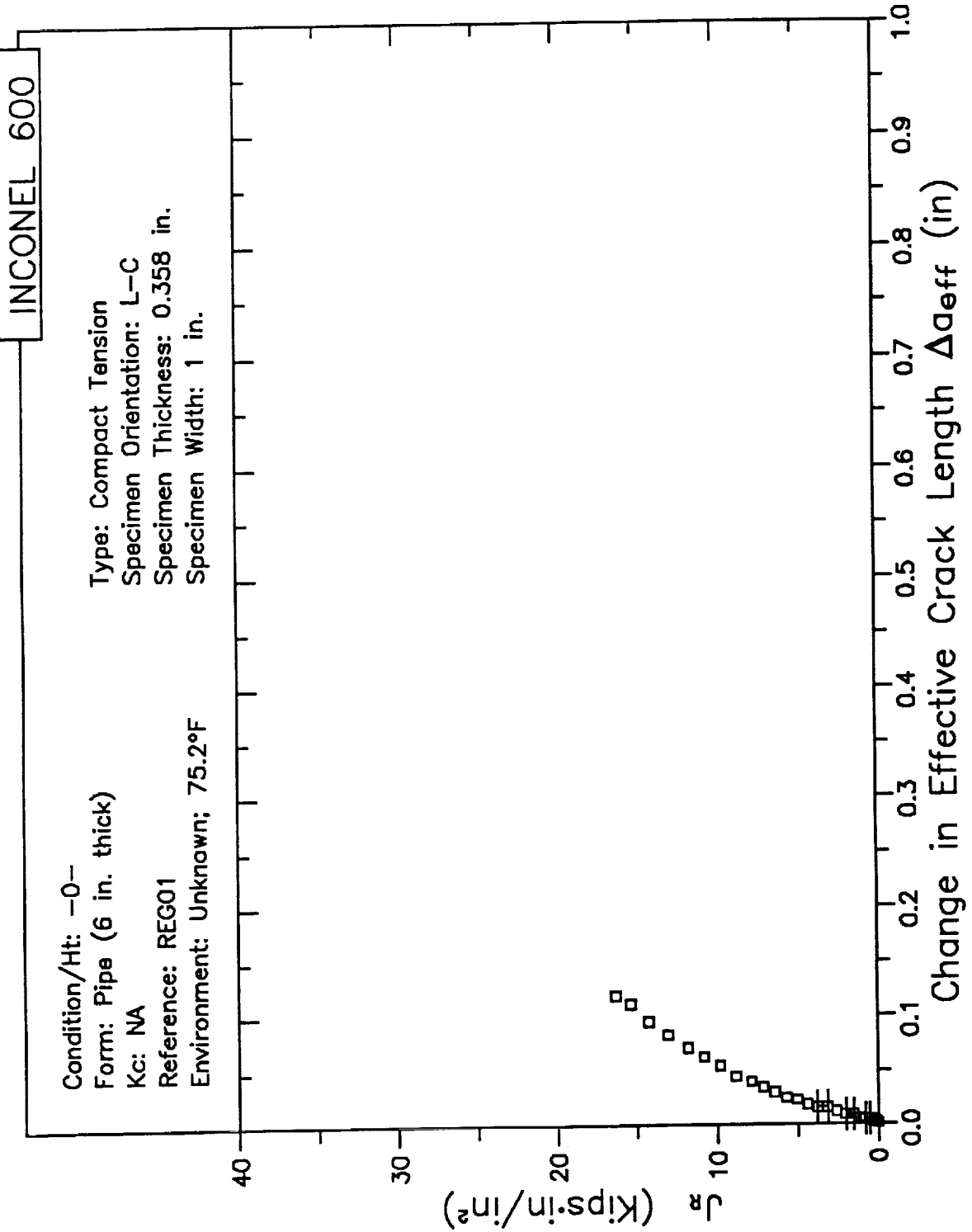
Type: Compact Tension  
Specimen Orientation: L-T  
Specimen Thickness: 0.527 in.  
Specimen Width: 5 in.



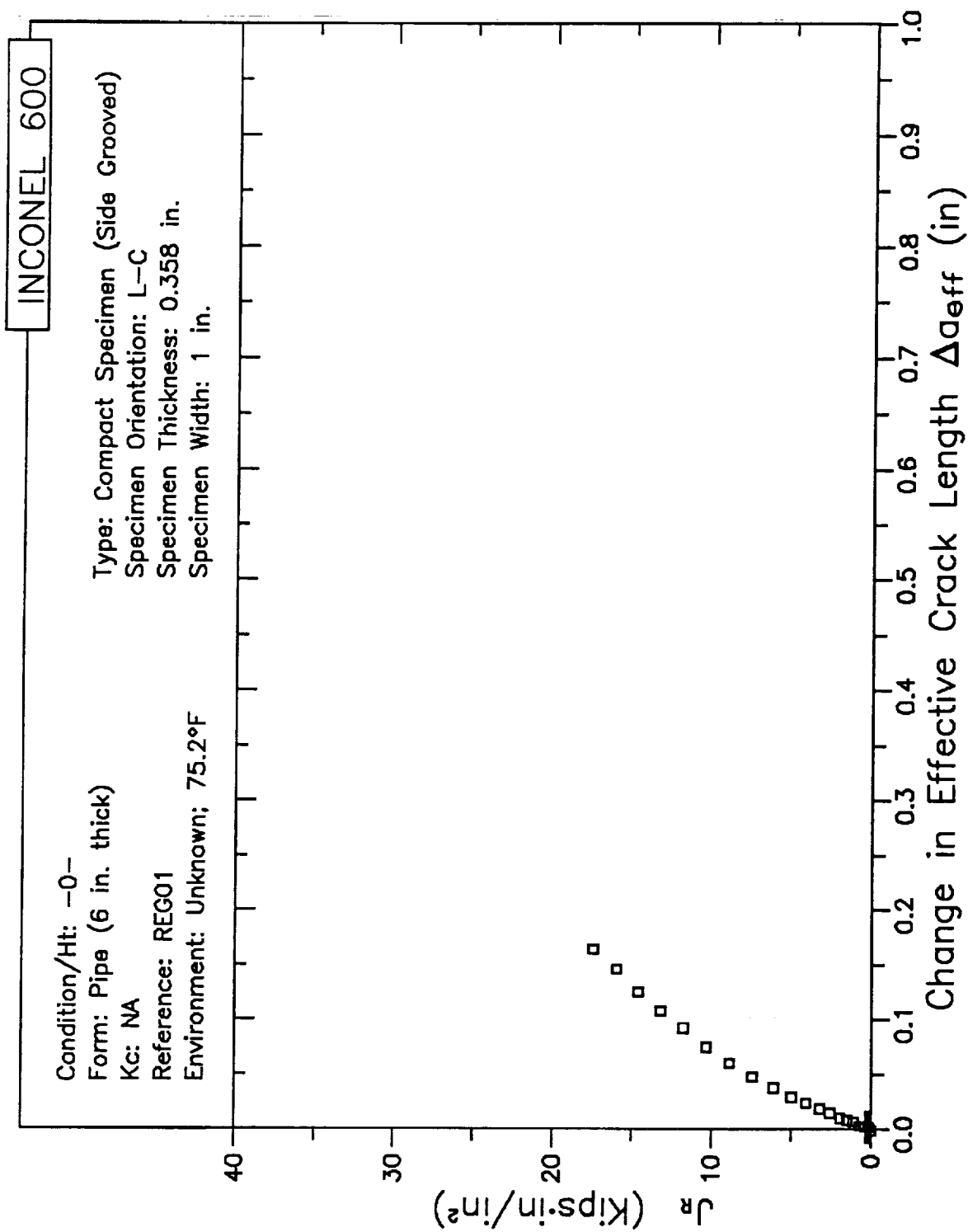
# RESISTANCE CURVE



# RESISTANCE CURVE



# RESISTANCE CURVE

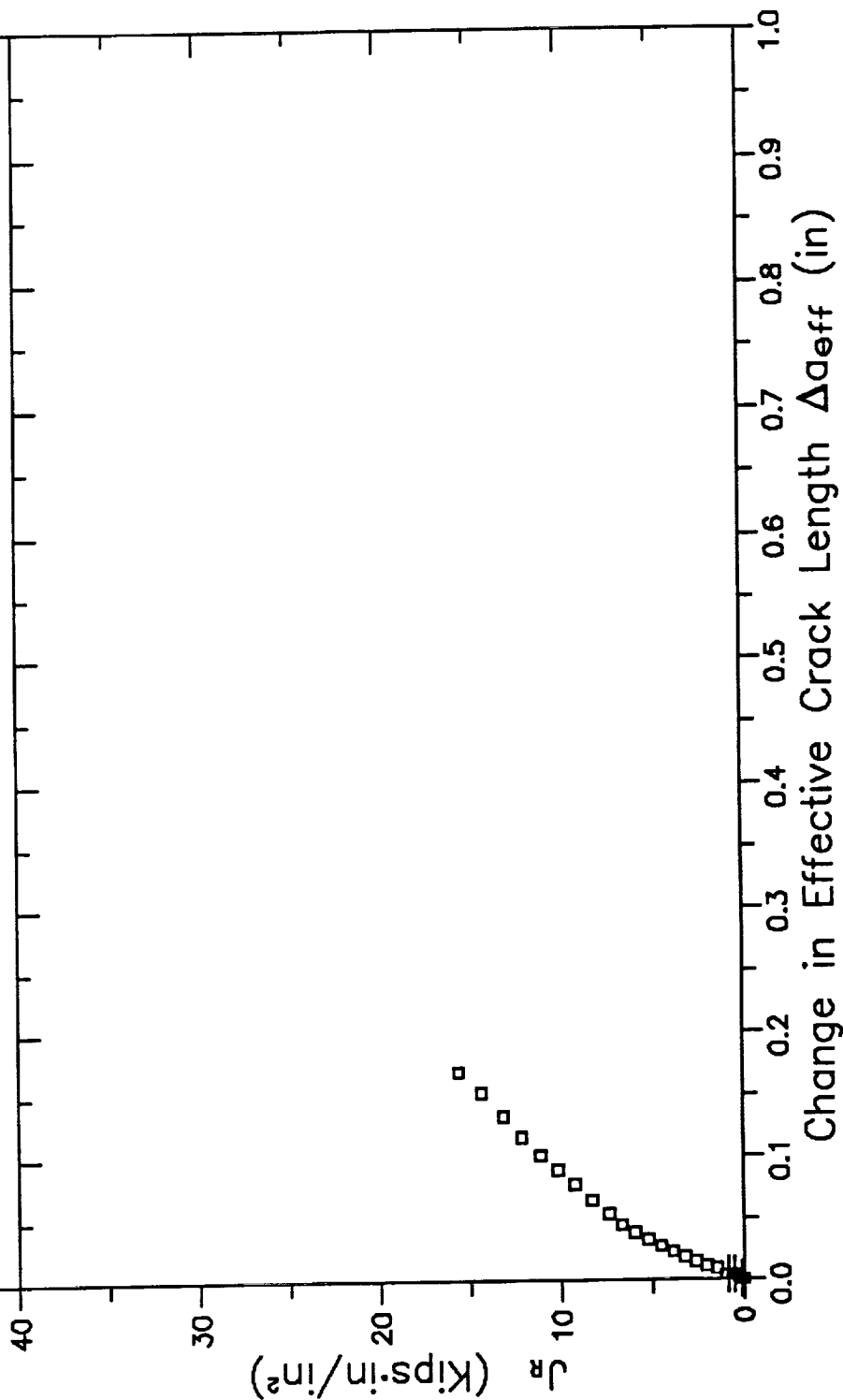


# RESISTANCE CURVE

INCONEL 600

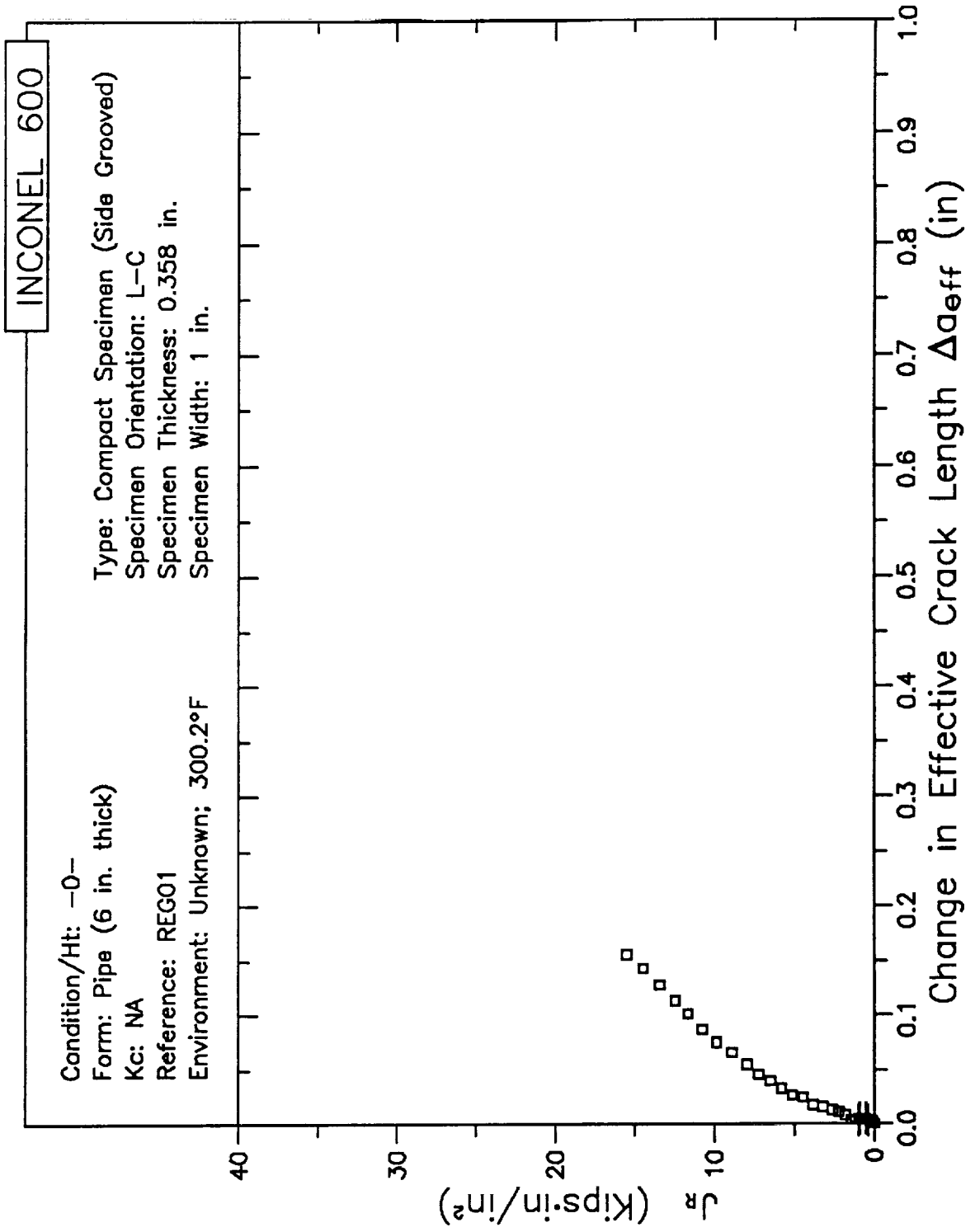
Condition/Ht: -0-  
Form: Pipe (6 in. thick)  
Kc: NA  
Reference: REG01  
Environment: Unknown; 75.2°F

Type: Compact Specimen (Side Grooved)  
Specimen Orientation: C-L  
Specimen Thickness: 0.358 in.  
Specimen Width: 1 in.

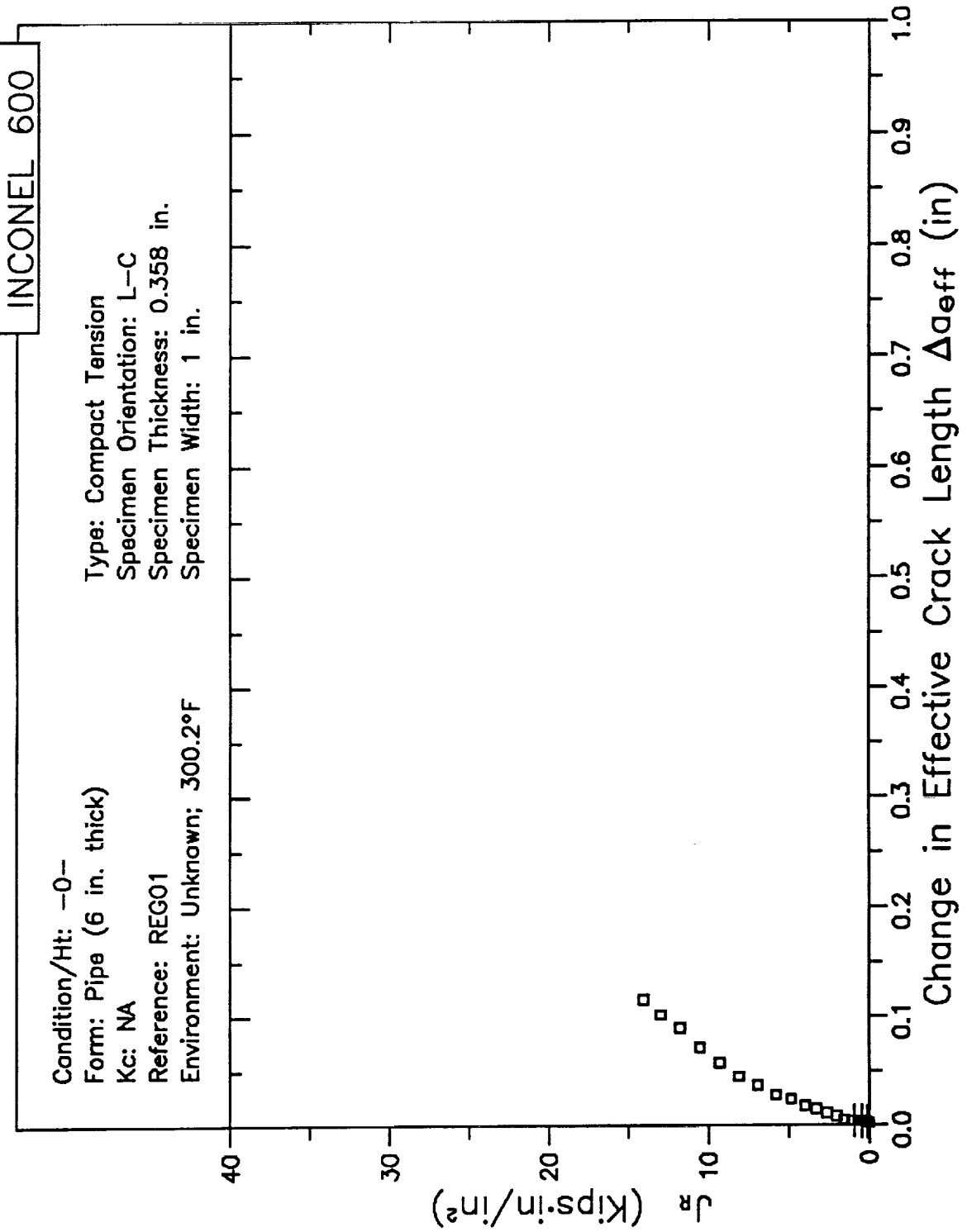




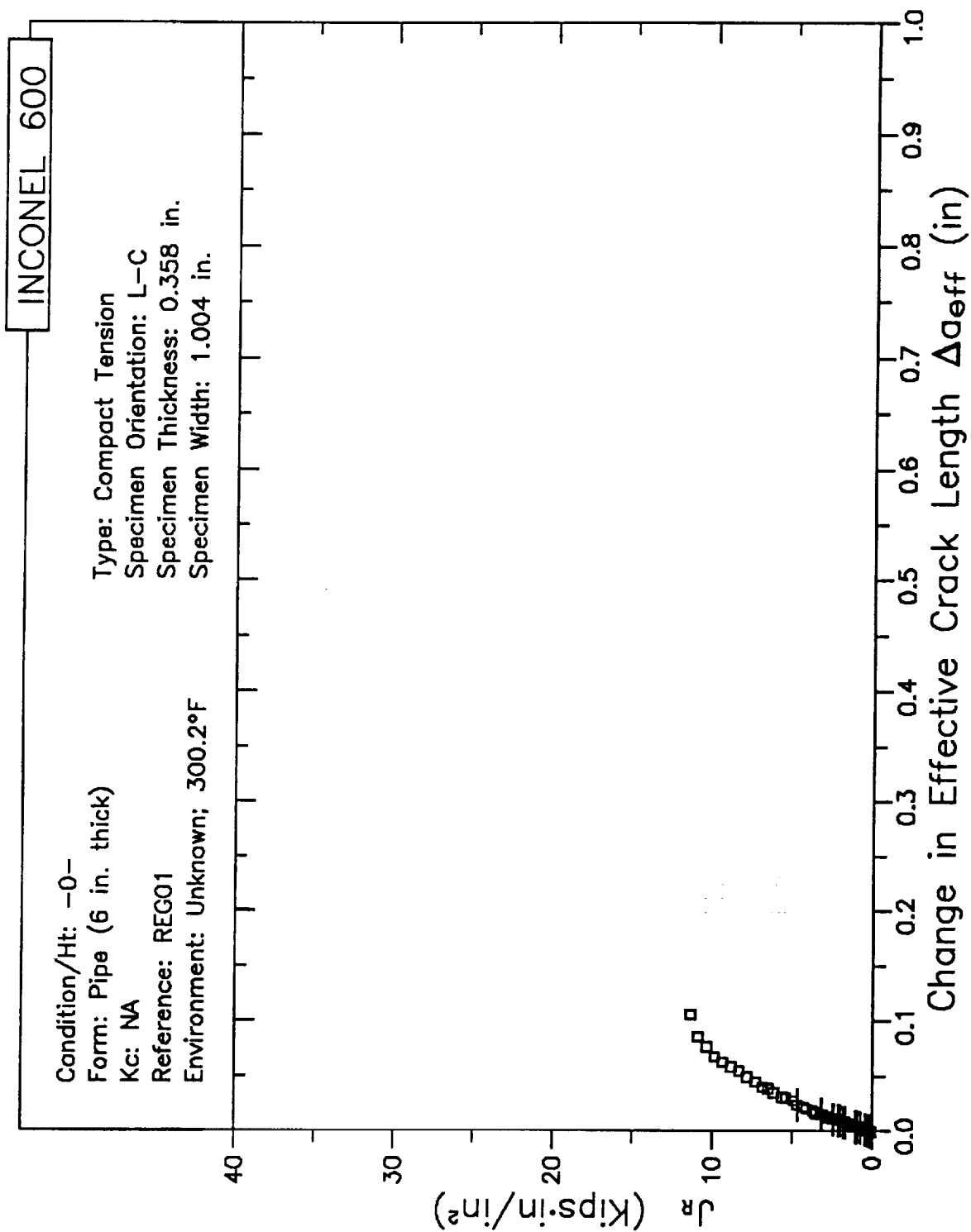
# RESISTANCE CURVE



# RESISTANCE CURVE



# RESISTANCE CURVE

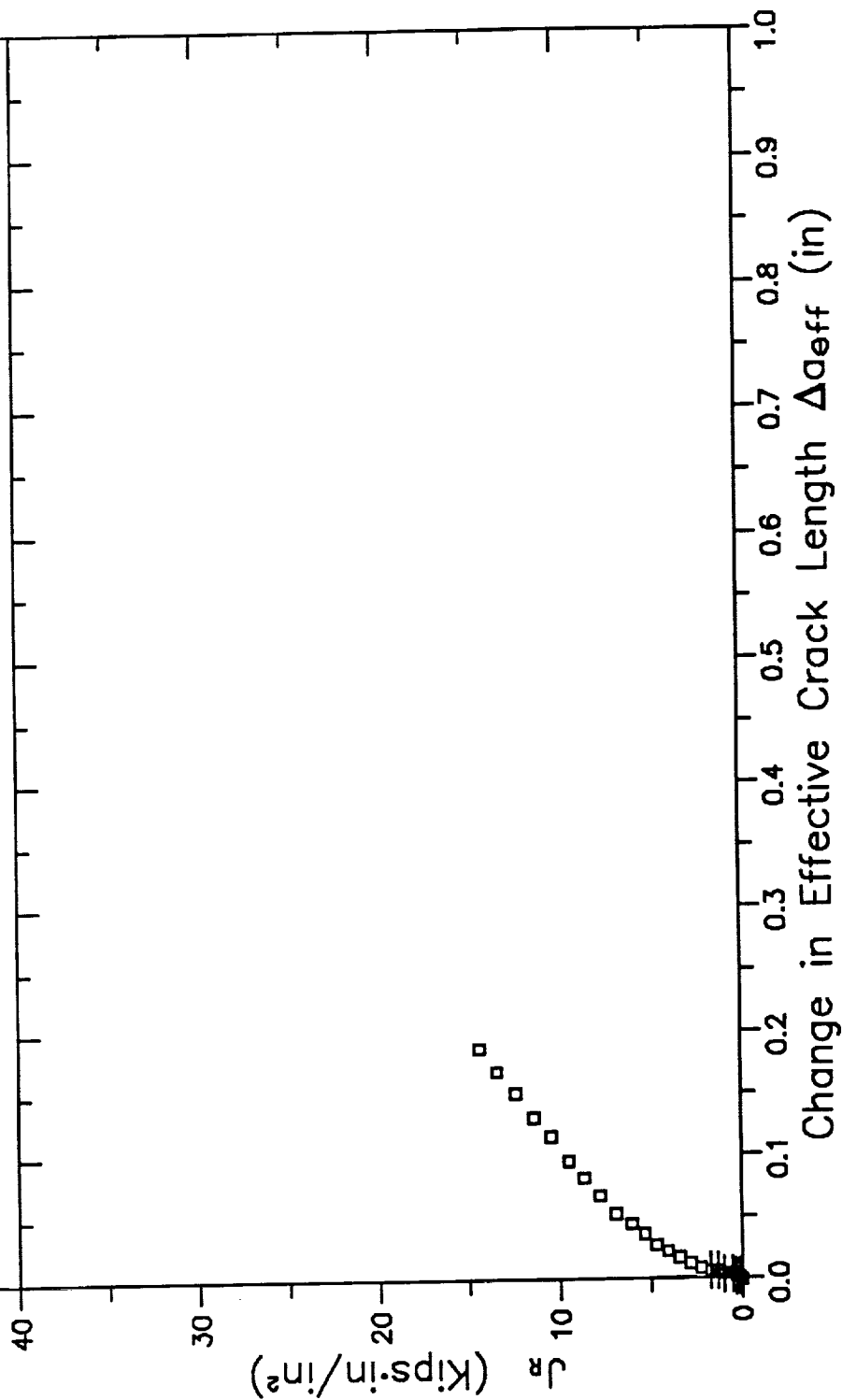


# RESISTANCE CURVE

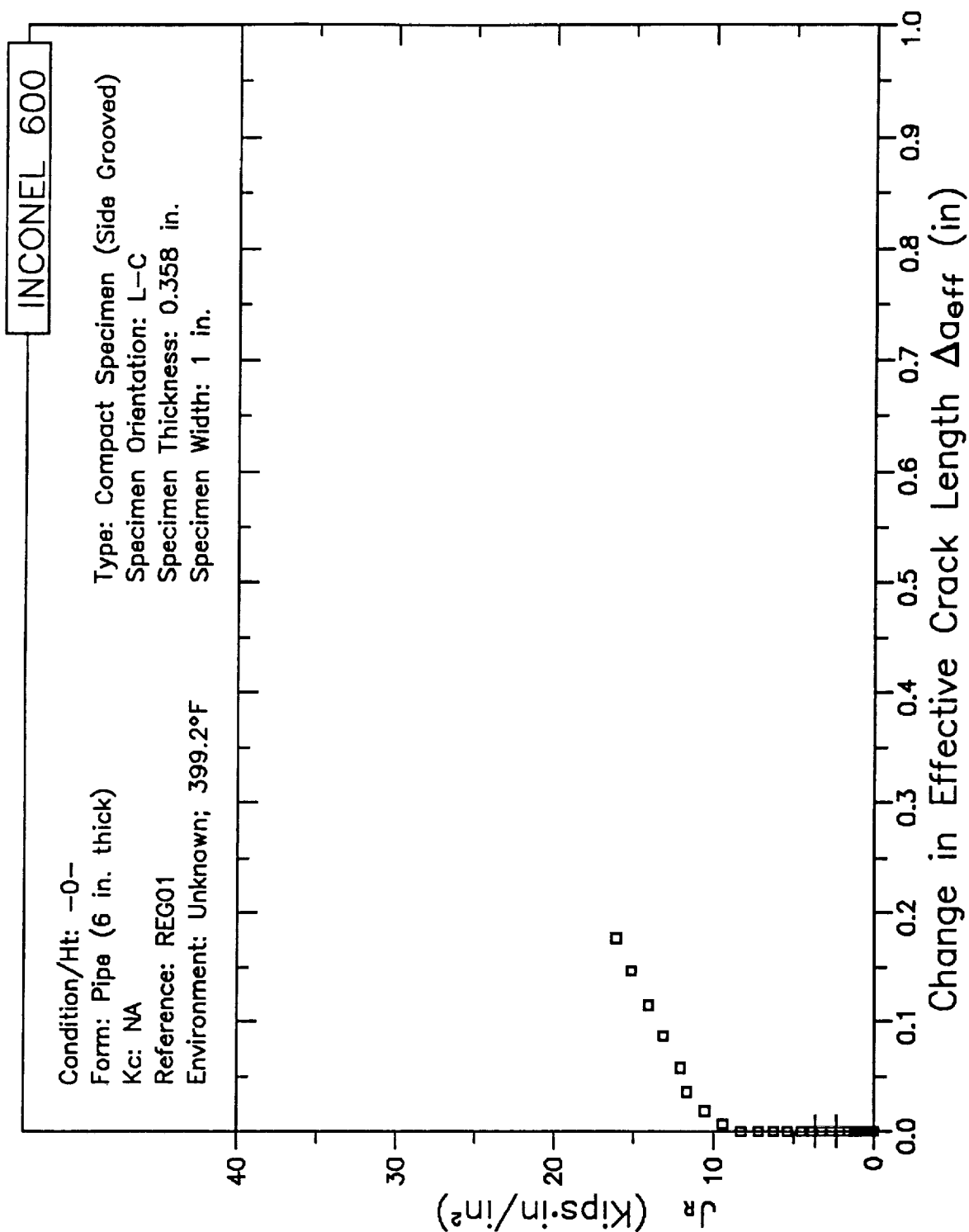
INCONEL 600

Condition/Ht: -0-  
Form: Pipe (6 in. thick)  
Kc: NA  
Reference: REG01  
Environment: Unknown; 300.2°F

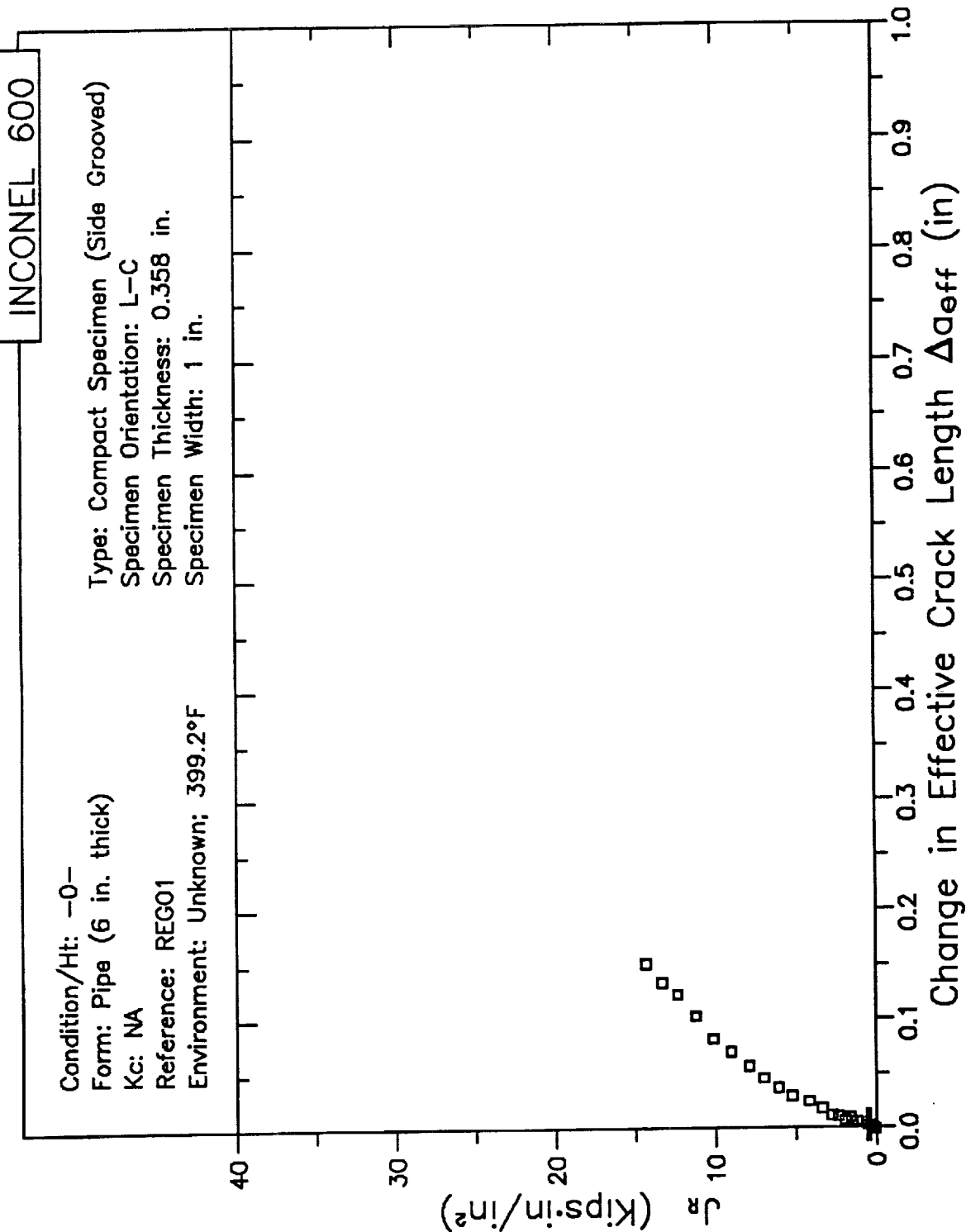
Type: Compact Specimen (Side Grooved)  
Specimen Orientation: C-L  
Specimen Thickness: 0.358 in.  
Specimen Width: 1 in.



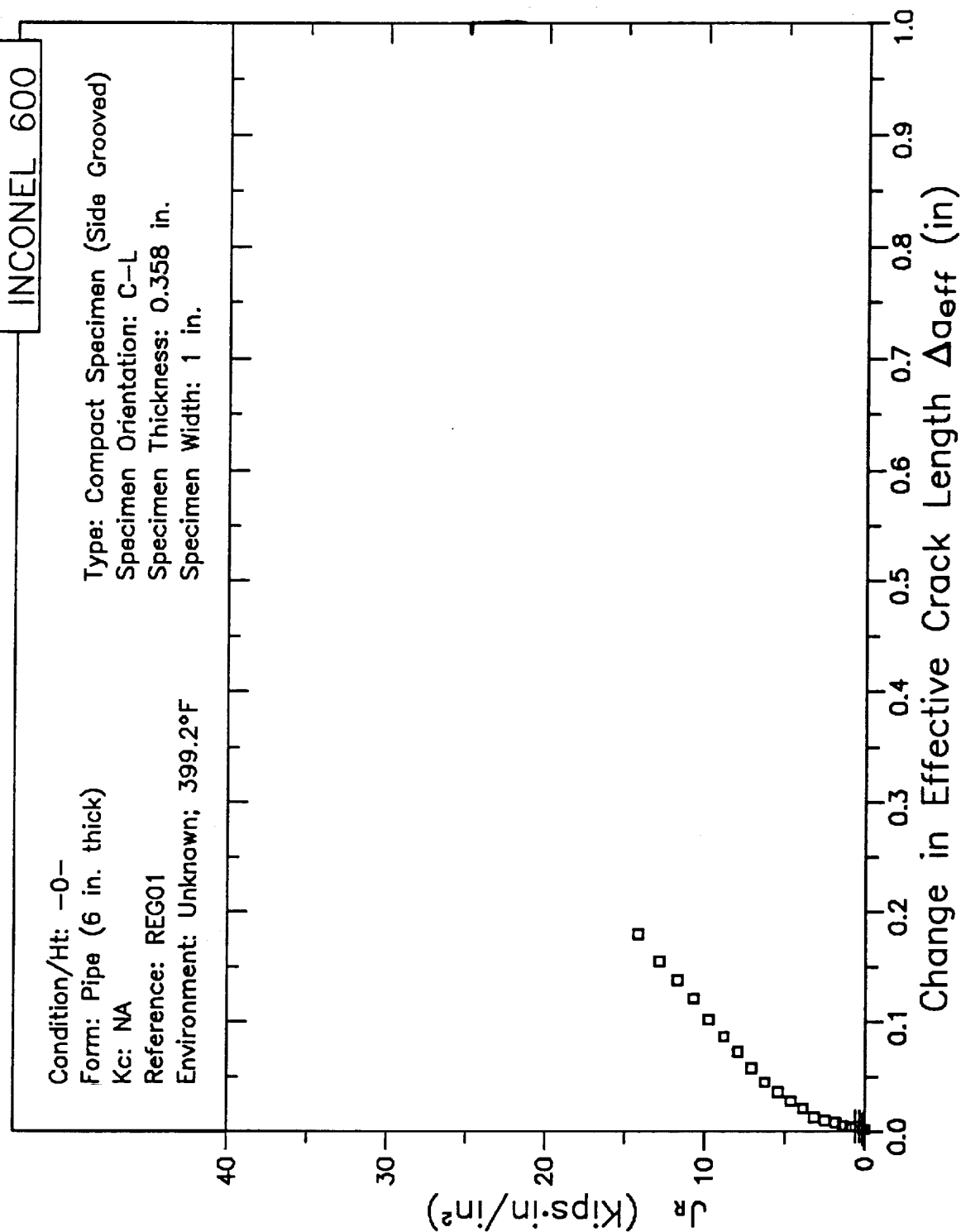
# RESISTANCE CURVE



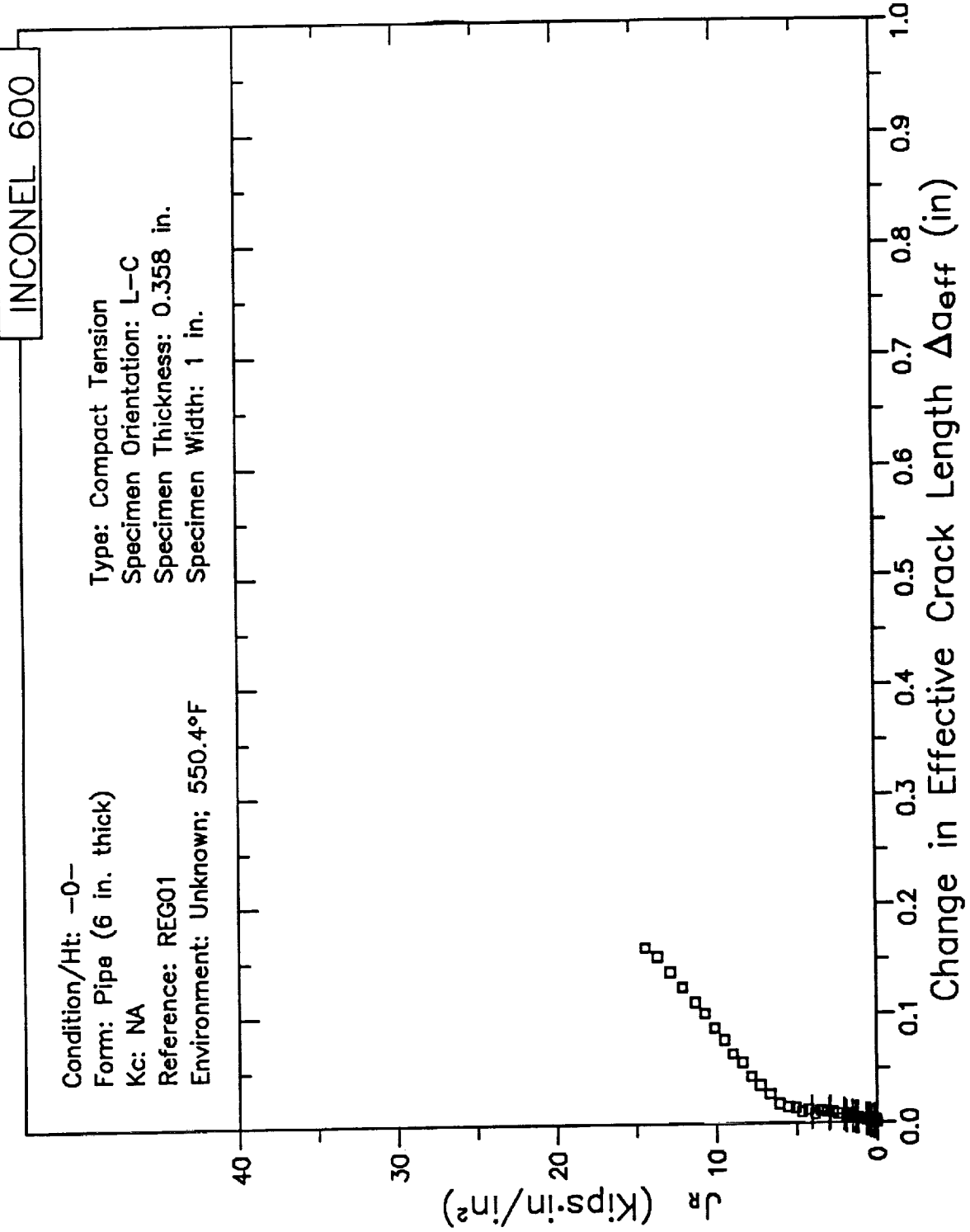
# RESISTANCE CURVE



# RESISTANCE CURVE

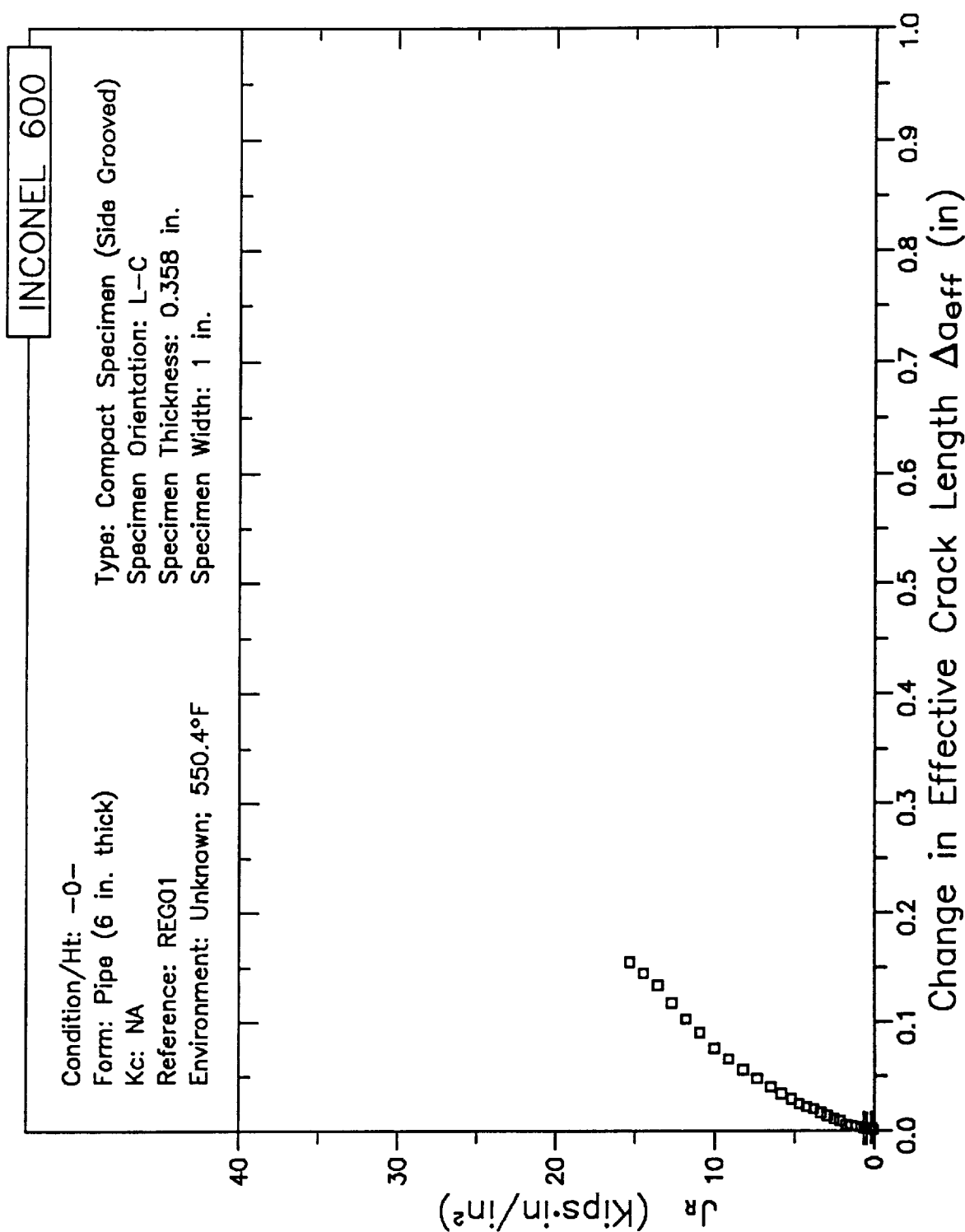


# RESISTANCE CURVE





# RESISTANCE CURVE



# RESISTANCE CURVE

INCONEL 600

Condition/Ht: -0-

Form: Pipe (6 in. thick)

Kc: NA

Reference: REG01

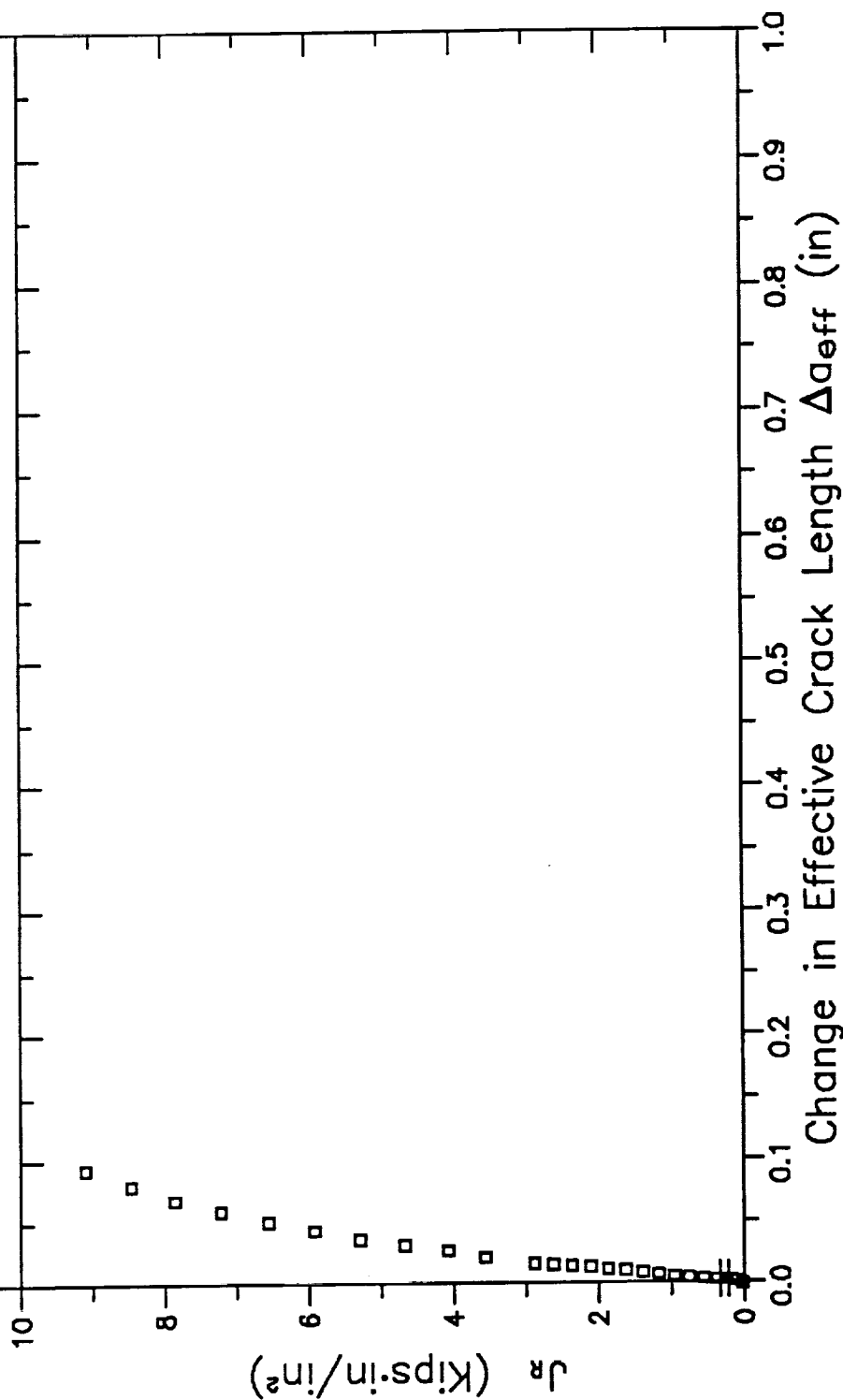
Environment: Unknown; 550.4°F

Type: Compact Specimen (Side Grooved)

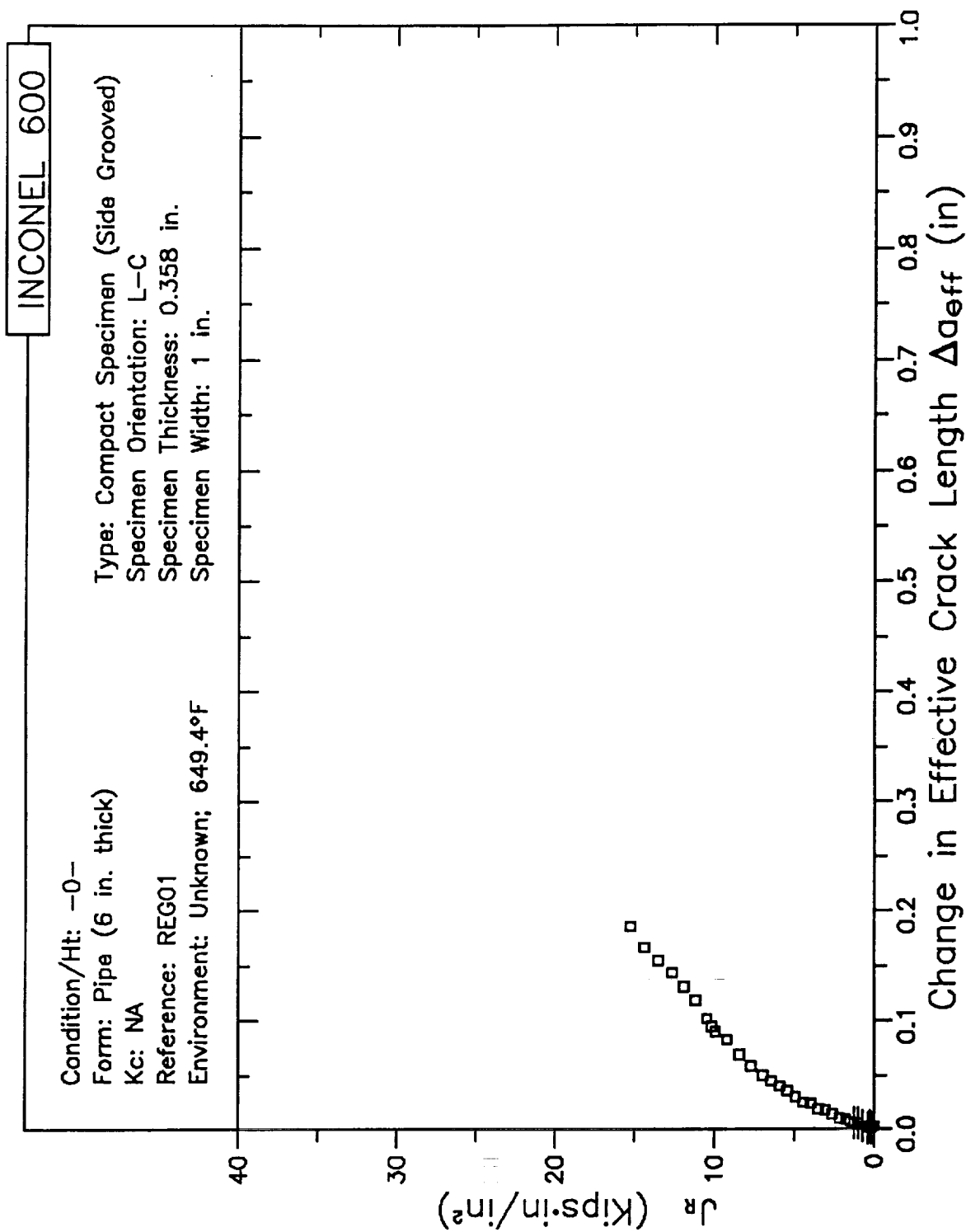
Specimen Orientation: C-L

Specimen Thickness: 0.358 in.

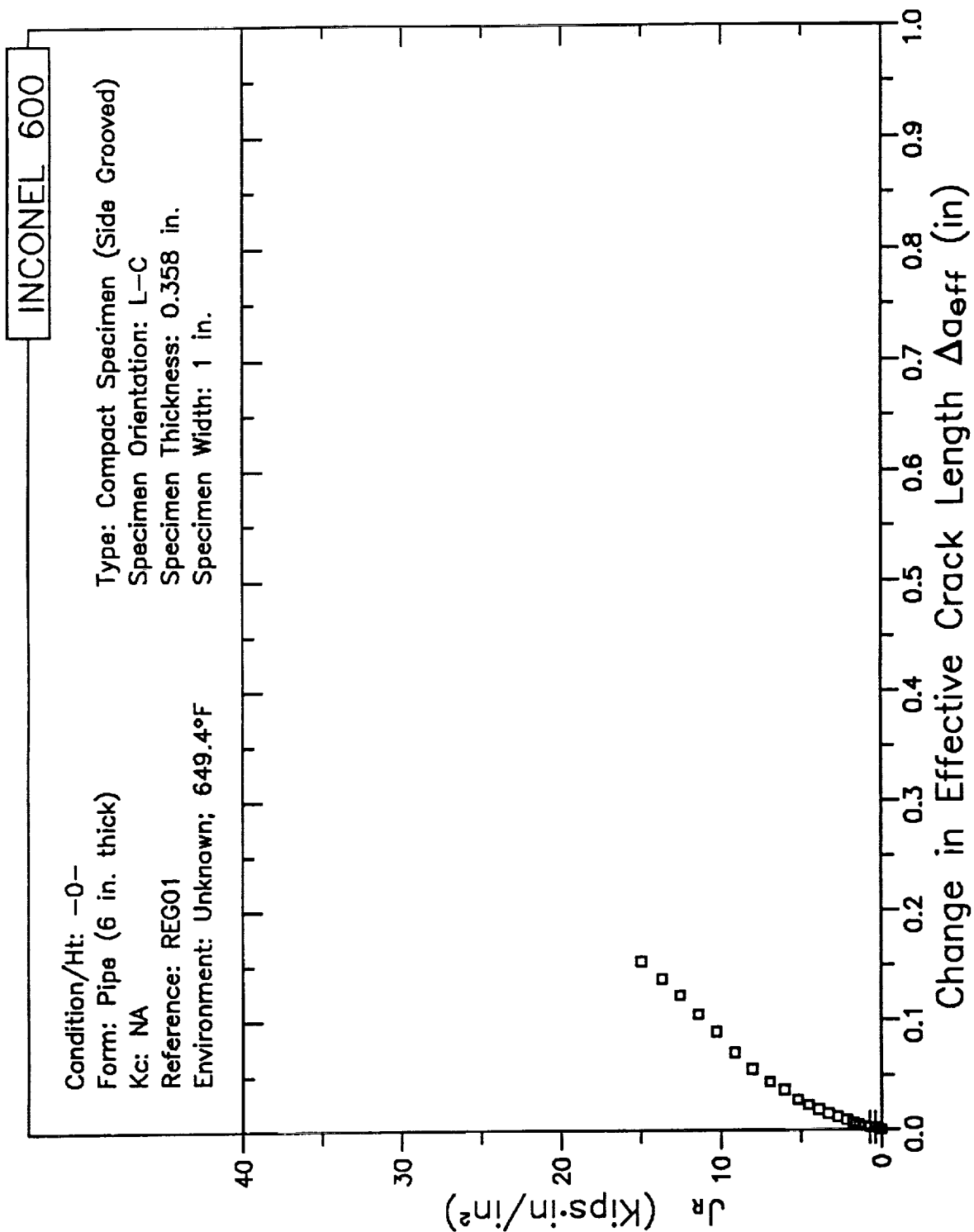
Specimen Width: 1 in.



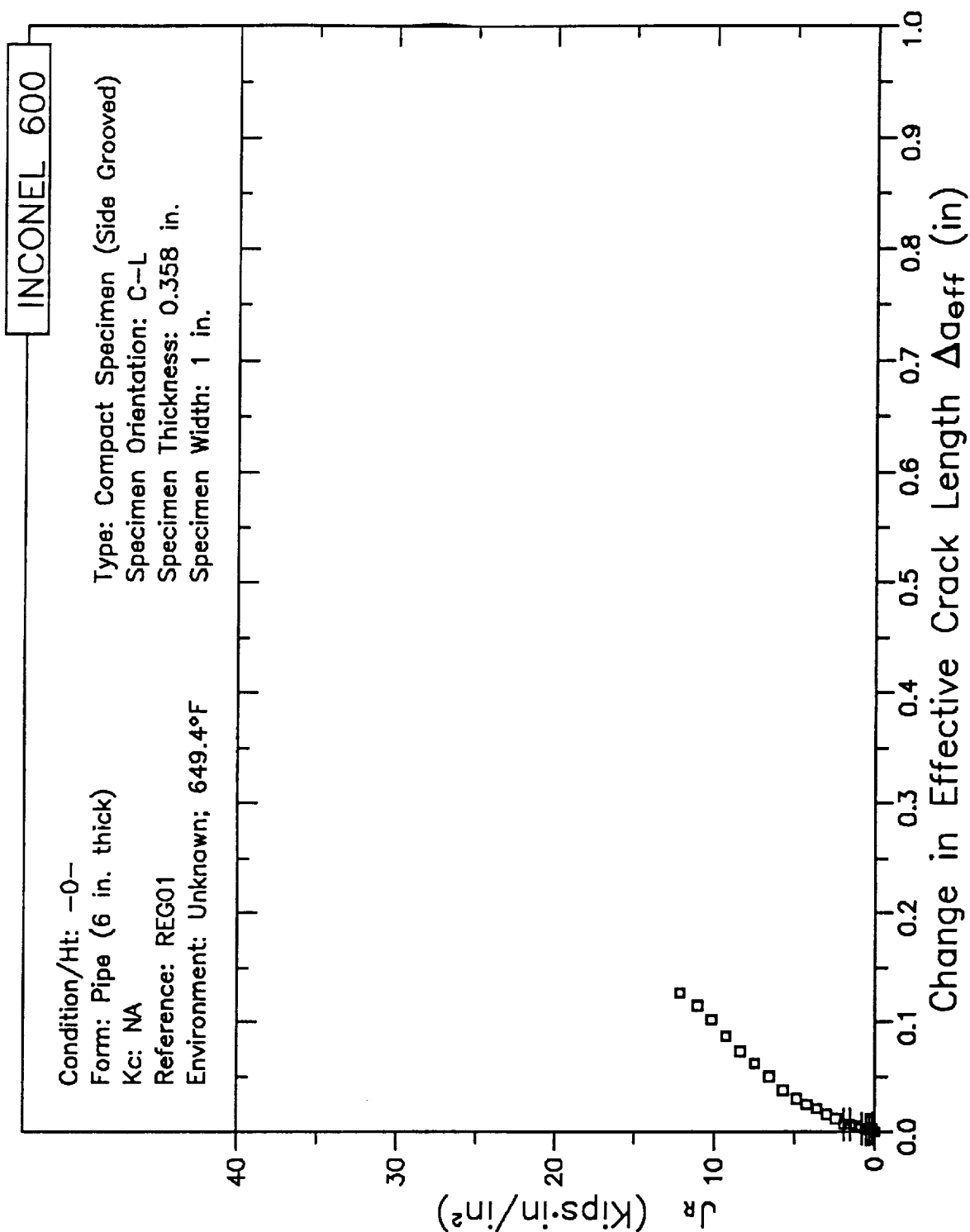
# RESISTANCE CURVE



# RESISTANCE CURVE



# RESISTANCE CURVE



D3-18

**Appendix E**  
**Graphical Presentation of FCG Rate and R-Curve Data for Titanium**

C

C

C



R

6-2-2-2-2

Condition/Ht: TRIPLEX SOLUTION HTA

Form: 6 in. Plate

Specimen Type: CT

Orientation: L-T

Frequency: 10 Hz

Environment: LAB AIR; RT

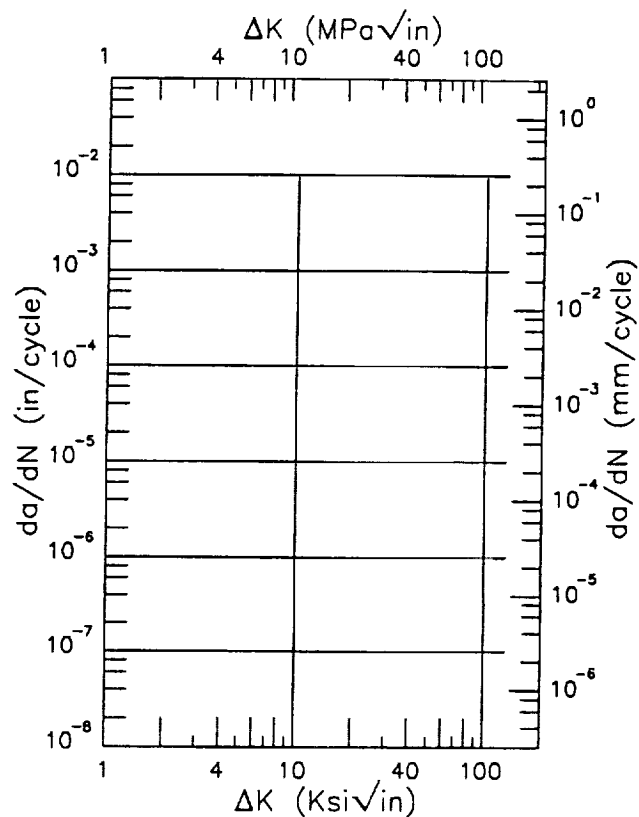
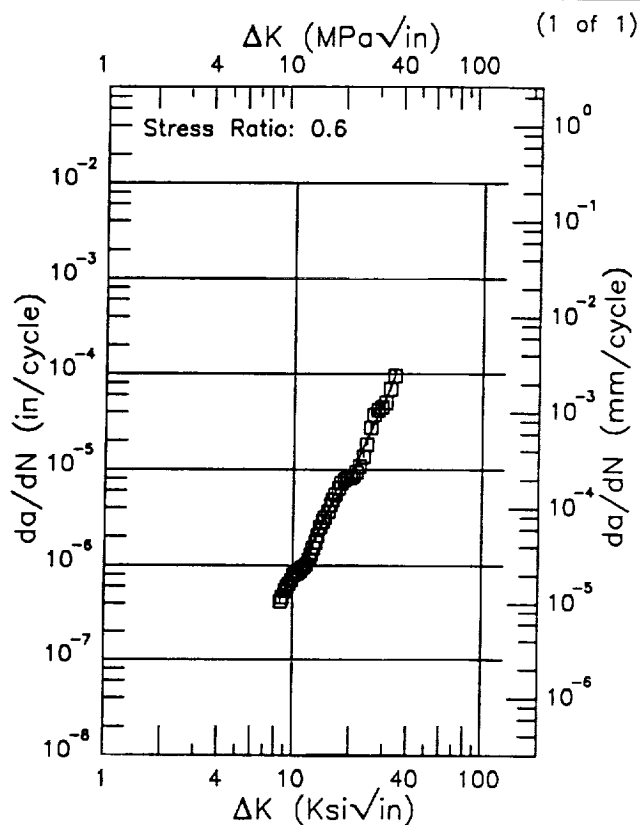
Yield Strength: 142 ksi

Ult. Strength:

Specimen Thk: 0.249 in.

Specimen Width: 2.003 in.

Ref: F22

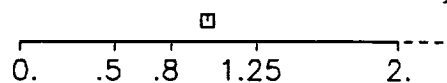


$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
8.55 (min)	0.535
9.	0.533
10.	0.640
13.	1.91
16.	4.39
20.	8.52
25.	23.6
30.	52.1
33.84 (max)	92.5

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
--------------------------------------	-------------------------------

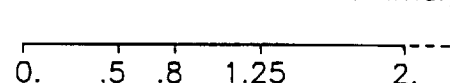
RMS %  
Error  
12.64

Life Prediction Ratio Summary



RMS %  
Error

Life Prediction Ratio Summary

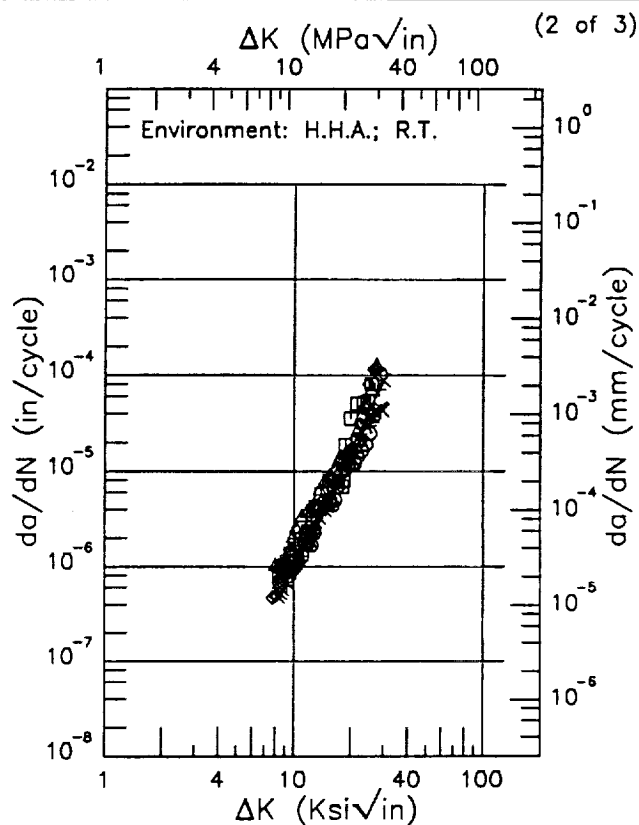
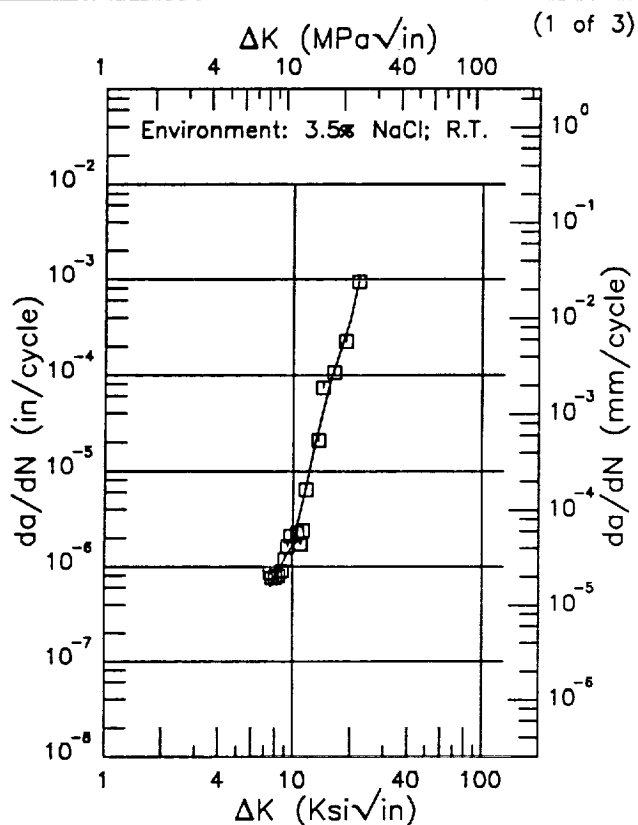


E1-2

E 6-2-2-2-2

Condition/Ht: TRIPLEX SOLUTION HTA  
 Form: 2 - 6 in. Plate  
 Specimen Type: CT  
 Orientation: L-T  
 Stress Ratio: 0.6  
 Frequency: 2 Hz

Yield Strength: 142 ksi  
 Ult. Strength:  
 Specimen Thk: 0.249 - 0.251 in.  
 Specimen Width: 1.997 - 2.004 in.  
 Ref: F22

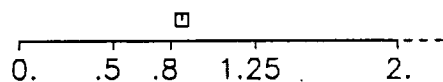


$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
7.57 (min)	0.607
8.	0.814
9.	1.20
10.	1.71
13.	18.5
16.	102.
20.	389.
21.89 (max)	935.

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
7.70 (min)	0.580
8.	0.636
9.	0.869
10.	1.19
13.	2.93
16.	6.54
20.	16.4
25.	41.9
29.75 (max)	86.5

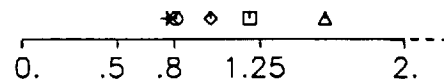
RMS %  
 Error  
 32.77

Life Prediction Ratio Summary



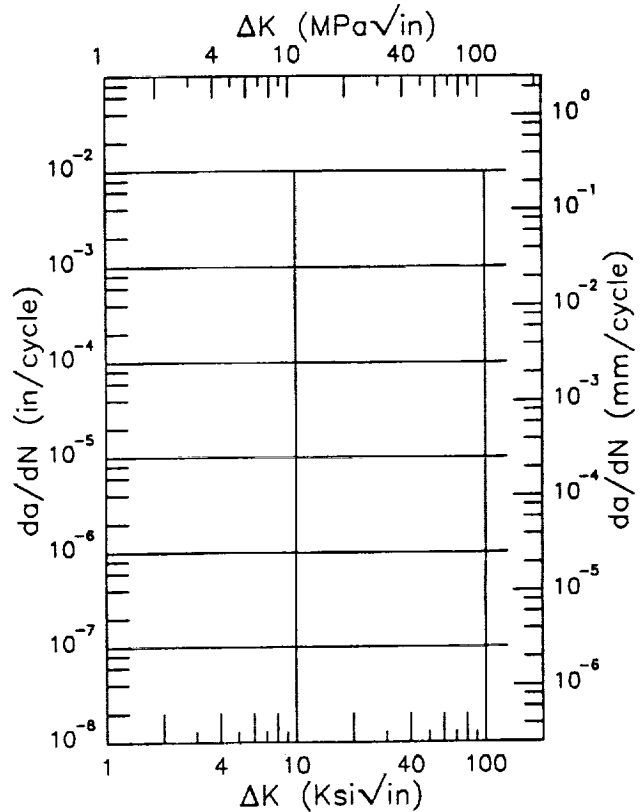
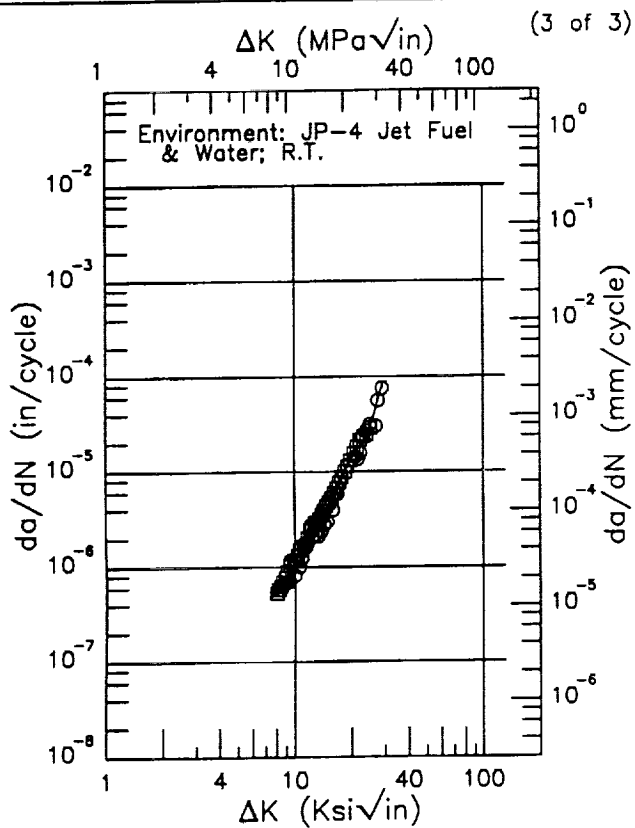
RMS %  
 Error  
 39.37

Life Prediction Ratio Summary



Condition/Ht: TRIPLEX SOLUTION HTA  
 Form: 2 - 6 in. Plate  
 Specimen Type: CT  
 Orientation: L-T  
 Stress Ratio: 0.6  
 Frequency: 2 Hz

Yield Strength: 142 ksi  
 Ult. Strength:  
 Specimen Thk: 0.249 - 0.251 in.  
 Specimen Width: 1.997 - 2.004 in.  
 Ref: F22

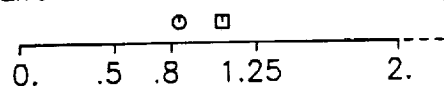


$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
7.96 (min)	0.504
8.	0.516
9.	0.817
10.	1.16
13.	2.61
16.	5.52
20.	13.5
25.	27.7
28.89 (max)	78.8

$\Delta K$  (Ksi√in)  $da/dN$  ( $10^{-6}$  in/cycle)

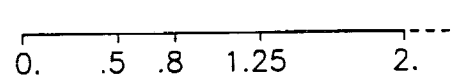
RMS %  
 Error  
 13.47

Life Prediction Ratio Summary



RMS %  
 Error

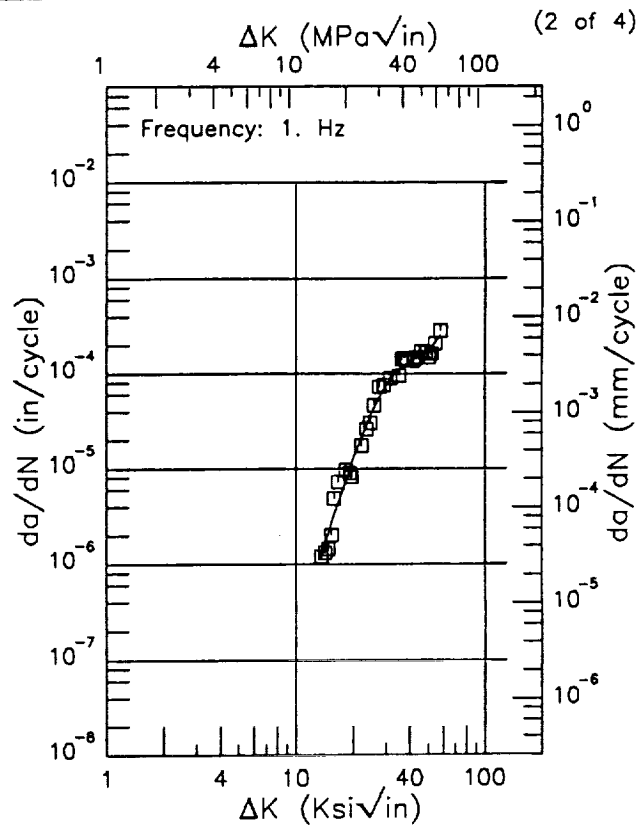
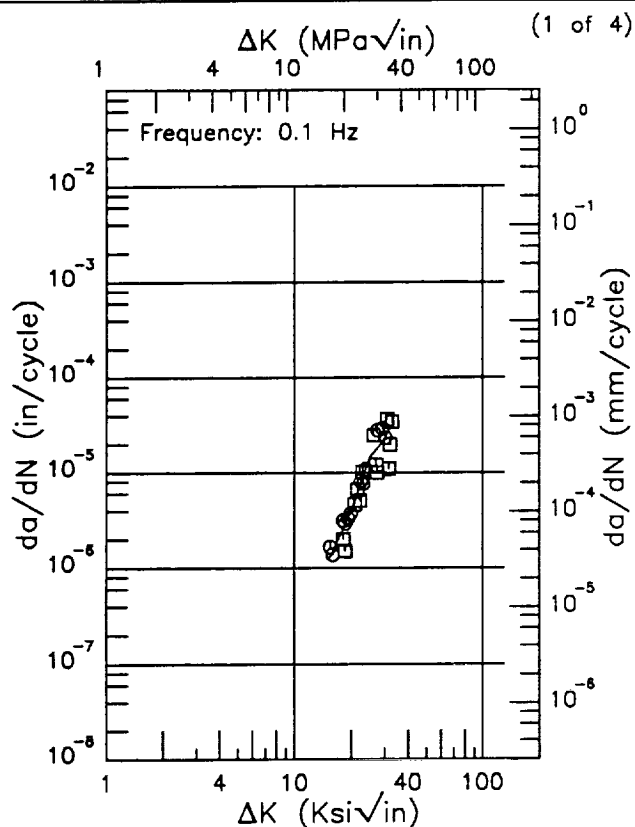
Life Prediction Ratio Summary



F 6-2-2-2-2

Condition/Ht: TRIPLEX SOLUTION HTA  
 Form: 6 in. Plate  
 Specimen Type: CT  
 Orientation: L-T  
 Stress Ratio: 0.05  
 Environment: 3.5% NACL; RT

Yield Strength: 142 ksi  
 Ult. Strength:  
 Specimen Thk: 0.248 - 0.251 in.  
 Specimen Width: 1.999 - 2.003 in.  
 Ref: F22



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
15.41 (min)	1.29
16.	1.52
20.	3.94
25.	14.4
30.	22.0
32.85 (max)	23.9

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
13.51 (min)	1.13
16.	3.34
20.	12.5
25.	38.2
30.	76.1
35.	112.
40.	135.
50.	173.
58.06 (max)	253.

RMS %  
 Error  
 31.27

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

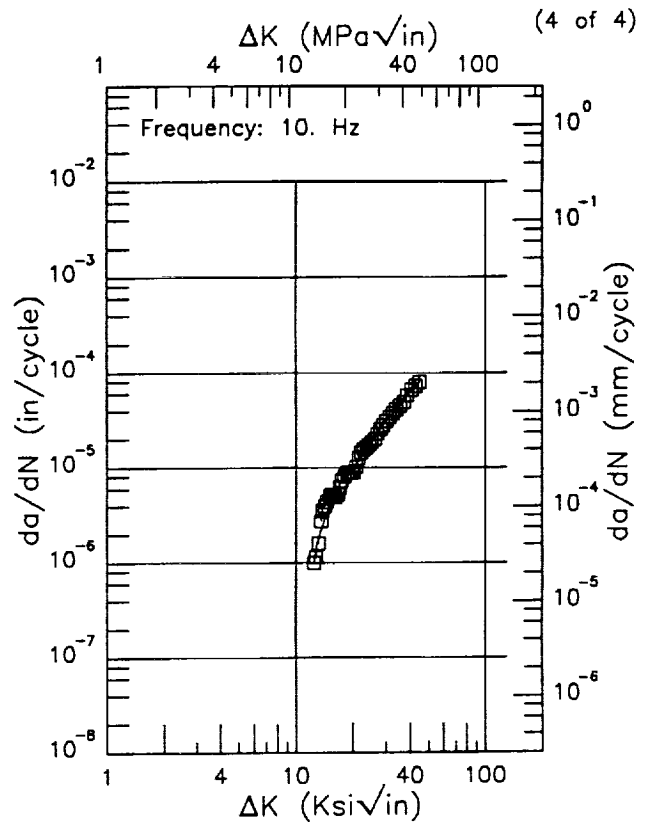
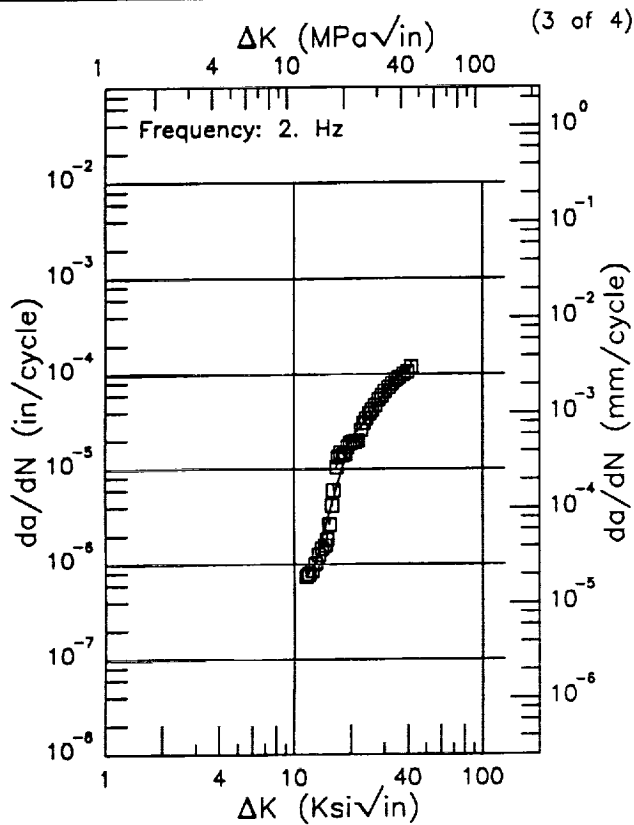
RMS %  
 Error  
 22.92

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

Condition/Ht: TRIPLEX SOLUTION HTA  
 Form: 6 in. Plate  
 Specimen Type: CT  
 Orientation: L-T  
 Stress Ratio: 0.05  
 Environment: 3.5% NACL; RT

Yield Strength: 142 ksi  
 Ult. Strength:  
 Specimen Thk: 0.248 - 0.251 in.  
 Specimen Width: 1.999 - 2.003 in.  
 Ref: F22



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
11.49 (min)	0.742
13.	1.01
16.	4.82
20.	21.6
25.	35.1
30.	63.8
35.	92.8
40.	104.
41.54 (max)	123.

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
12.44 (min)	1.03
13.	1.66
16.	5.87
20.	9.58
25.	18.7
30.	31.5
35.	43.2
40.	63.3
44.64 (max)	77.4

RMS %  
 Error  
 23.93

Life Prediction Ratio Summary  
  
 0. .5 .8 1.25 2.

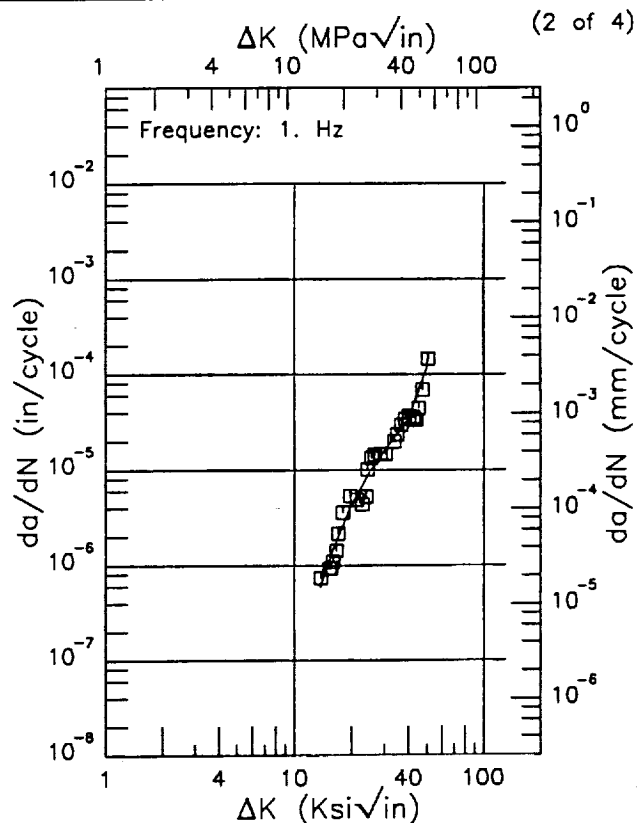
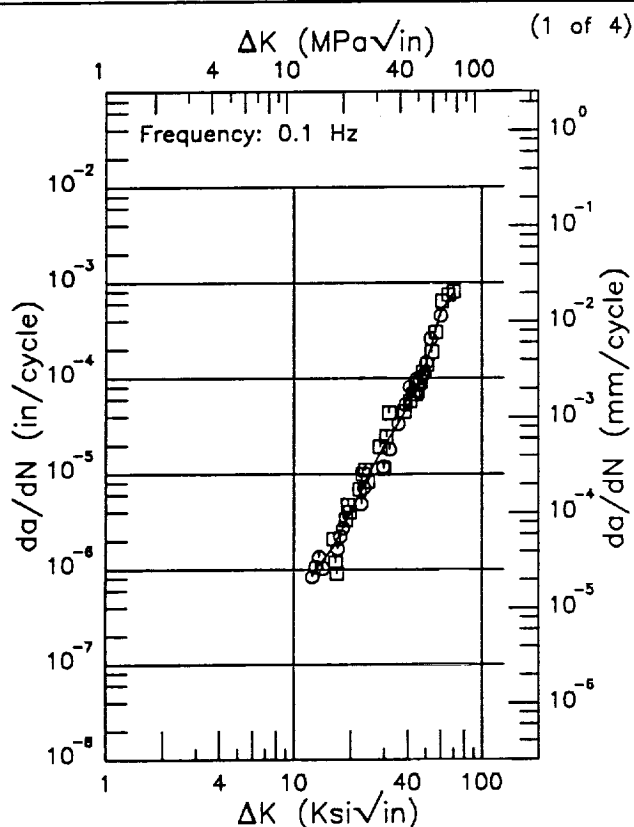
RMS %  
 Error  
 14.53

Life Prediction Ratio Summary  
  
 0. .5 .8 1.25 2.

F 6-2-2-2-2

Condition/Ht: TRIPLEX SOLUTION HTA  
Form: 2 - 6 in. Plate  
Specimen Type: CT  
Orientation: L-T  
Stress Ratio: 0.05  
Environment: HHA; RT

Yield Strength: 142 ksi  
Ult. Strength:  
Specimen Thk: 0.246 - 0.253 in.  
Specimen Width: 1.996 - 2.002 in.  
Ref: F22



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
12.45 (min)	0.918
13.	0.979
16.	1.68
20.	3.98
25.	10.1
30.	19.6
35.	32.4
40.	51.2
50.	138.
60.	483.
69.92 (max)	769.

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
13.79 (min)	0.595
16.	1.43
20.	4.27
25.	9.54
30.	15.9
35.	24.4
40.	34.2
50.	120.
50.65 (max)	151.

RMS %  
Error  
24.41

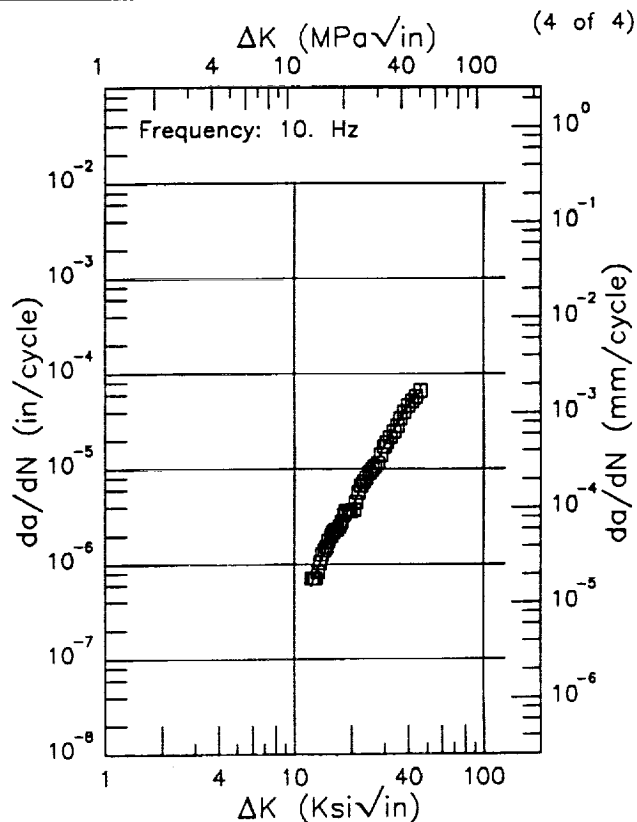
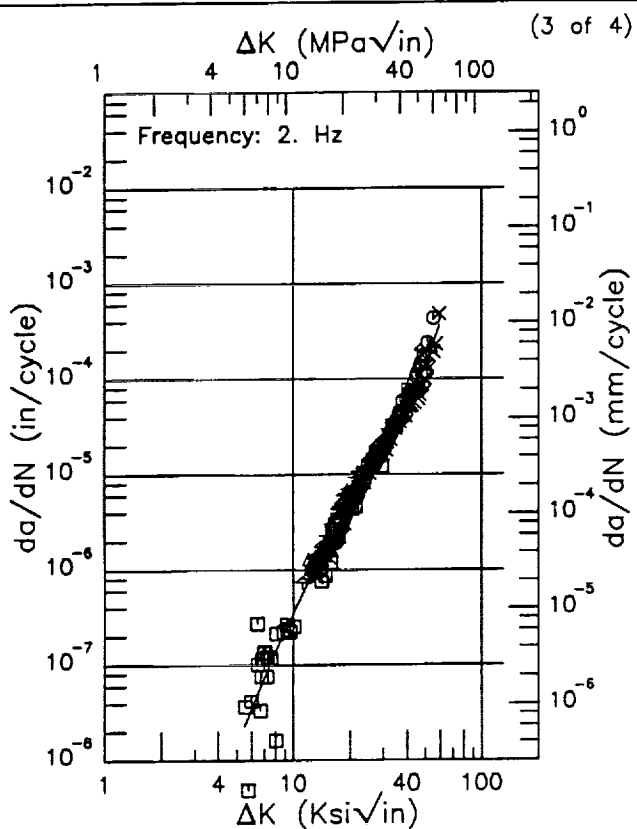
Life Prediction Ratio Summary  
0. .5 .8 1.25 2. ---

RMS %  
Error  
23.84

Life Prediction Ratio Summary  
0. .5 .8 1.25 2. ---

Condition/Ht: TRIPLEX SOLUTION HTA  
 Form: 2 - 6 in. Plate  
 Specimen Type: CT  
 Orientation: L-T  
 Stress Ratio: 0.05  
 Environment: HHA; RT

Yield Strength: 142 ksi  
 Ult. Strength:  
 Specimen Thk: 0.246 - 0.253 in.  
 Specimen Width: 1.996 - 2.002 in.  
 Ref: F22



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
5.51 (min)	0.0228
6.	0.0349
7.	0.0733
8.	0.135
9.	0.226
10.	0.353
13.	1.01
16.	2.20
20.	4.89
25.	10.6
30.	19.6
35.	32.9
40.	52.8
50.	137.
59.16 (max)	356.

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
12.31 (min)	0.587
13.	0.816
16.	2.04
20.	4.10
25.	8.87
30.	17.3
35.	29.3
40.	45.5
46.27 (max)	64.4

RMS %  
 Error  
 39.89

Life Prediction Ratio Summary  
 x o d + A  
 0. .5 .8 1.25 2.

RMS %  
 Error  
 7.12

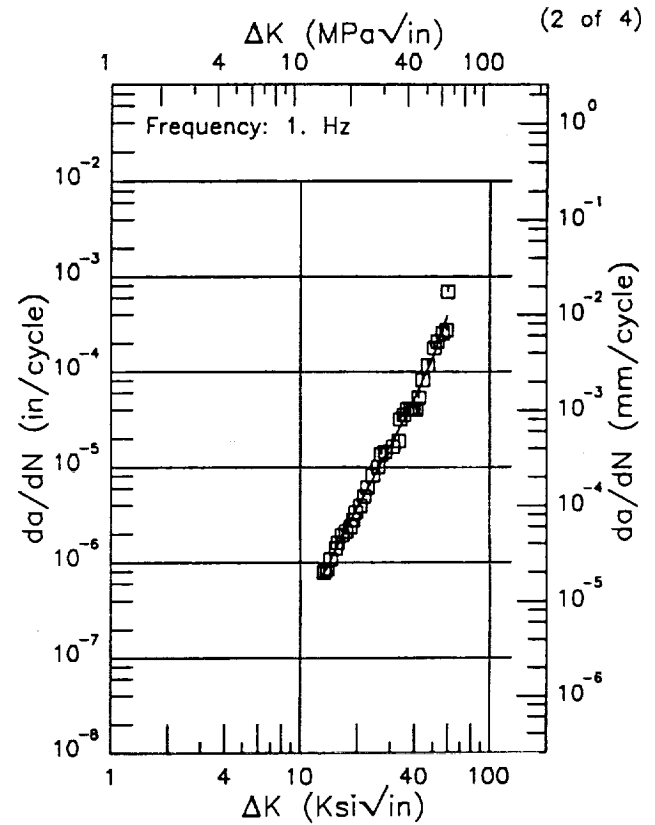
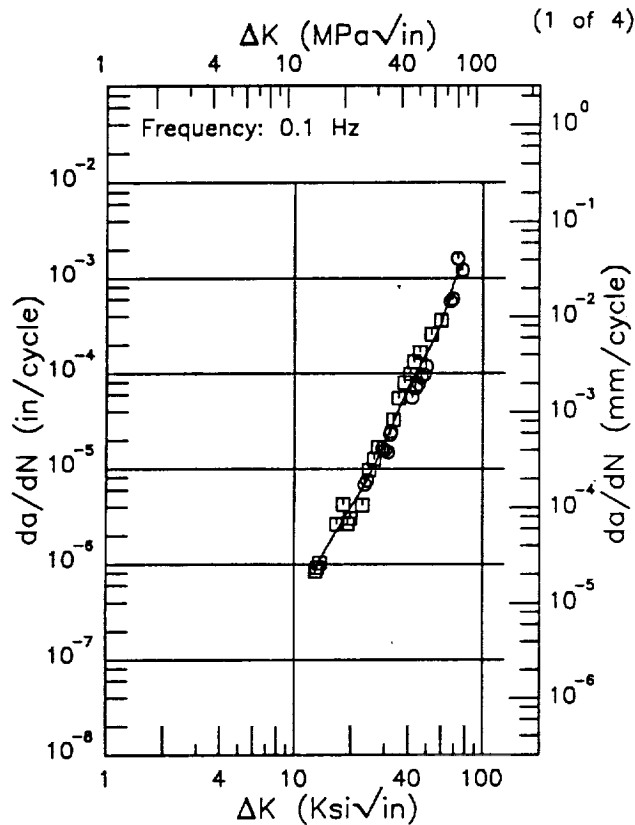
Life Prediction Ratio Summary  
 □  
 0. .5 .8 1.25 2.



F | 6-2-2-2-2 |

Condition/Ht: TRIPLEX SOLUTION HTA  
 Form: 2 - 6 in. Plate  
 Specimen Type: CT  
 Orientation: L-T  
 Stress Ratio: 0.05  
 Environment: JP4 + H2O; RT

Yield Strength: 142 ksi  
 Ult. Strength:  
 Specimen Thk: 0.249 - 0.253 in.  
 Specimen Width: 1.999 - 2.003 in.  
 Ref: F22



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
12.88 (min)	0.887
13.	0.919
16.	1.93
20.	3.96
25.	8.58
30.	18.4
35.	38.9
40.	73.0
50.	162.
60.	330.
70.	918.
77.51 (max)	1449.

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
13.20 (min)	0.720
16.	1.57
20.	3.71
25.	8.54
30.	16.9
35.	30.6
40.	52.1
50.	143.
59.69 (max)	389.

RMS %  
 Error  
 25.51

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

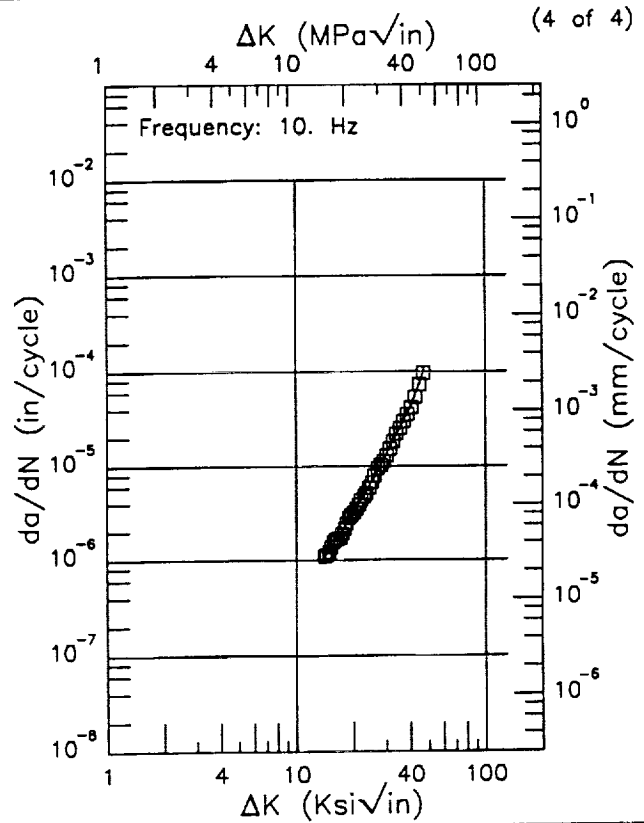
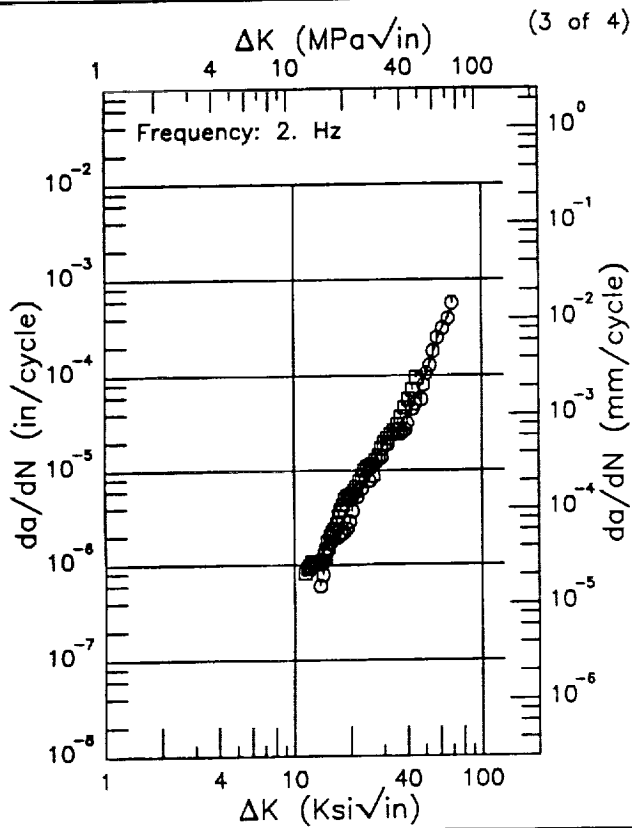
RMS %  
 Error  
 18.13

Life Prediction Ratio Summary

0. .5 .8 1.25 2. ---

Condition/Ht: TRIPLEX SOLUTION HTA  
 Form: 2 - 6 in. Plate  
 Specimen Type: CT  
 Orientation: L-T  
 Stress Ratio: 0.05  
 Environment: JP4 + H2O; RT

Yield Strength: 142 ksi  
 Ult. Strength:  
 Specimen Thk: 0.249 - 0.253 in.  
 Specimen Width: 1.999 - 2.003 in.  
 Ref: F22



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
11.37 (min)	0.764
13.	1.05
16.	2.01
20.	4.52
25.	10.2
30.	18.4
35.	27.7
40.	40.0
50.	98.7
60.	283.
68.94 (max)	483.

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
14.12 (min)	1.06
16.	1.54
20.	3.12
25.	6.80
30.	13.5
35.	24.5
40.	41.5
46.91 (max)	97.5

RMS %  
 Error  
 21.40

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS %  
 Error  
 3.47

Life Prediction Ratio Summary

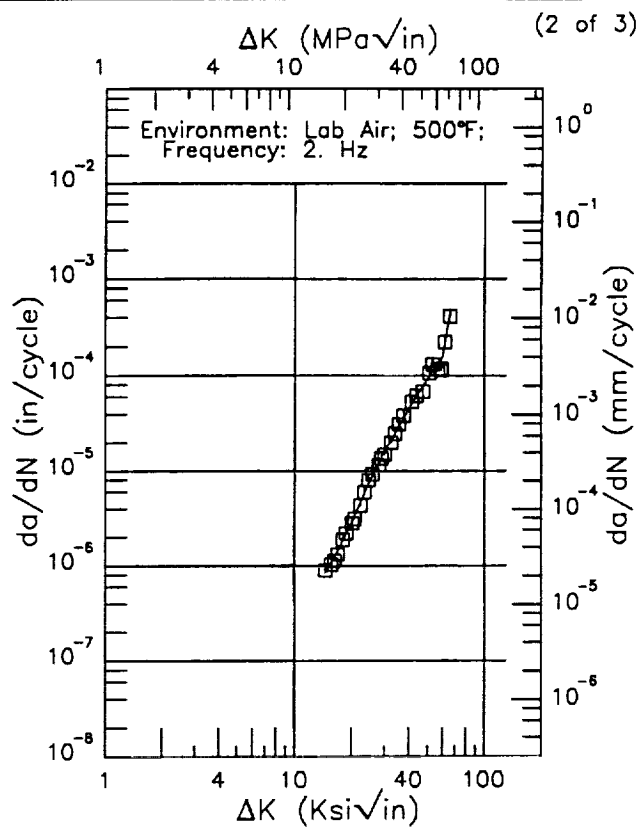
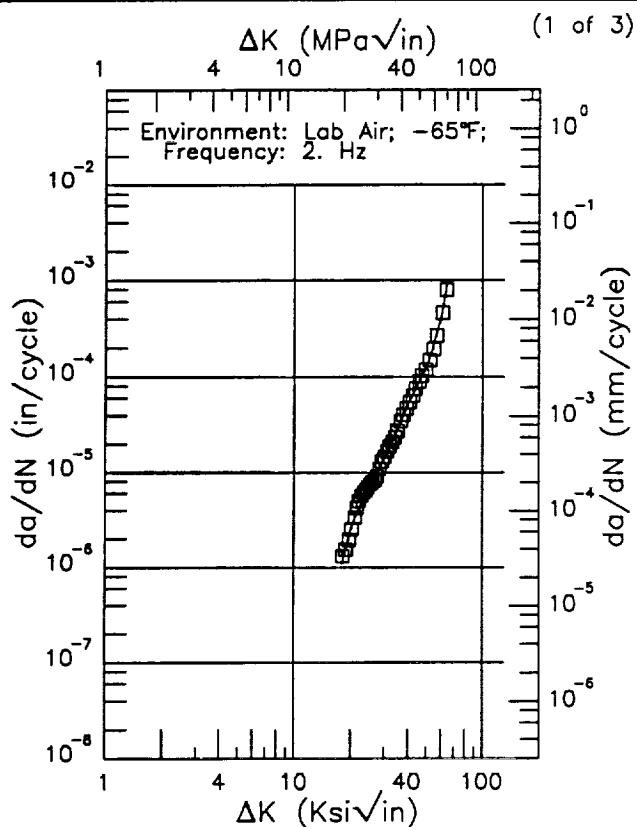
0. .5 .8 1.25 2.

6-2-2-2-2

EF

Condition/Ht: TRIPLEX SOLUTION HTA  
Form: 6 in. Plate  
Specimen Type: CT  
Orientation: L-T  
Stress Ratio: 0.05

Yield Strength: 142 ksi  
Ult. Strength:  
Specimen Thk: 0.248 - 0.251 in.  
Specimen Width: 2 - 2.002 in.  
Ref: F22



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
18.06 (min)	1.09
20.	2.56
25.	7.34
30.	13.7
35.	27.5
40.	51.1
50.	122.
60.	400.
63.99 (max)	793.

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
14.55 (min)	0.844
16.	1.12
20.	2.78
25.	7.75
30.	16.4
35.	28.2
40.	44.9
50.	92.9
60.	153.
65.47 (max)	419.

RMS %  
Error  
8.54

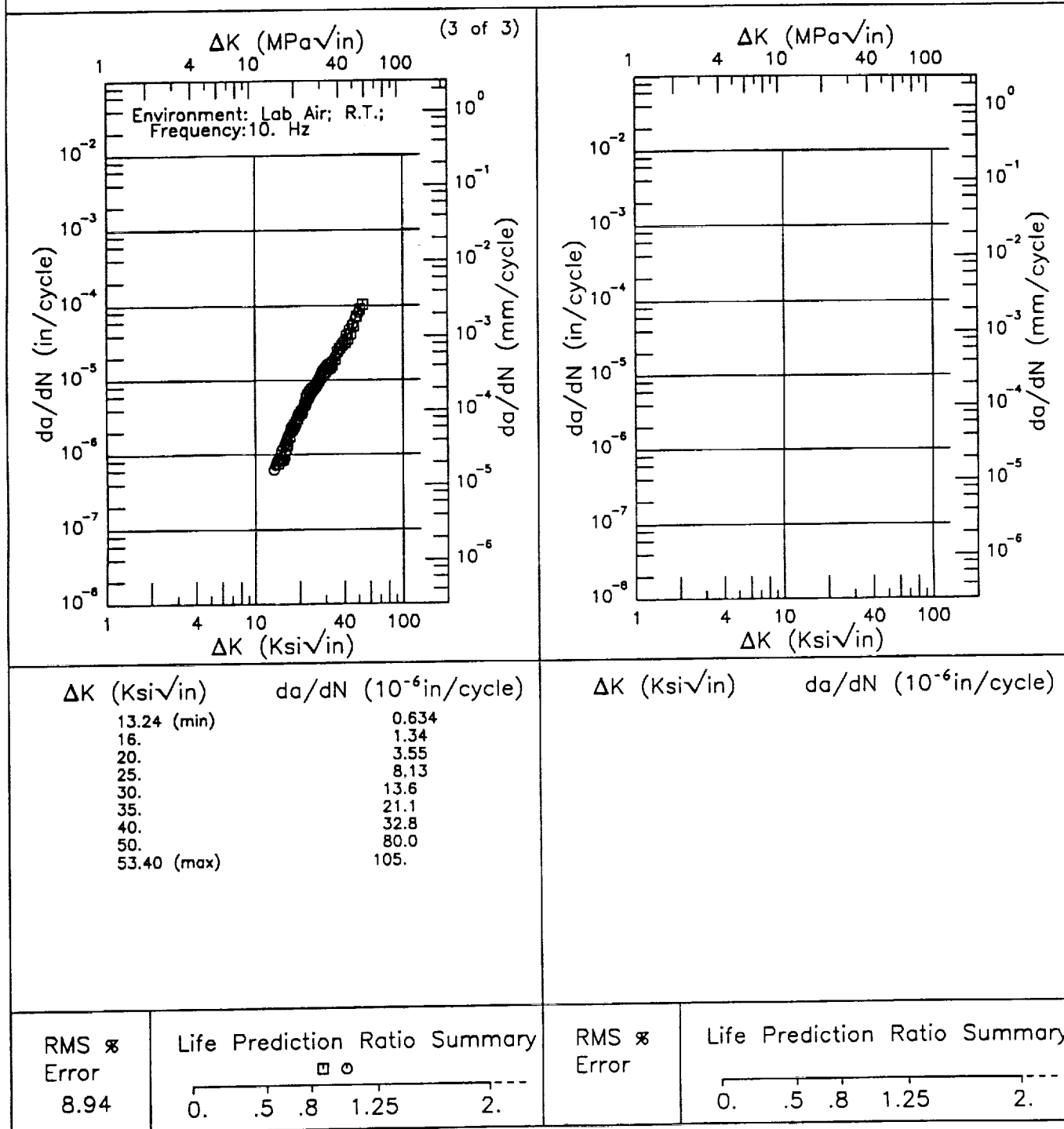
Life Prediction Ratio Summary  
0. .5 .8 1.25 2.

RMS %  
Error  
8.78

Life Prediction Ratio Summary  
0. .5 .8 1.25 2.

Condition/Ht: TRIPLEX SOLUTION HTA  
 Form: 6 in. Plate  
 Specimen Type: CT  
 Orientation: L-T  
 Stress Ratio: 0.05

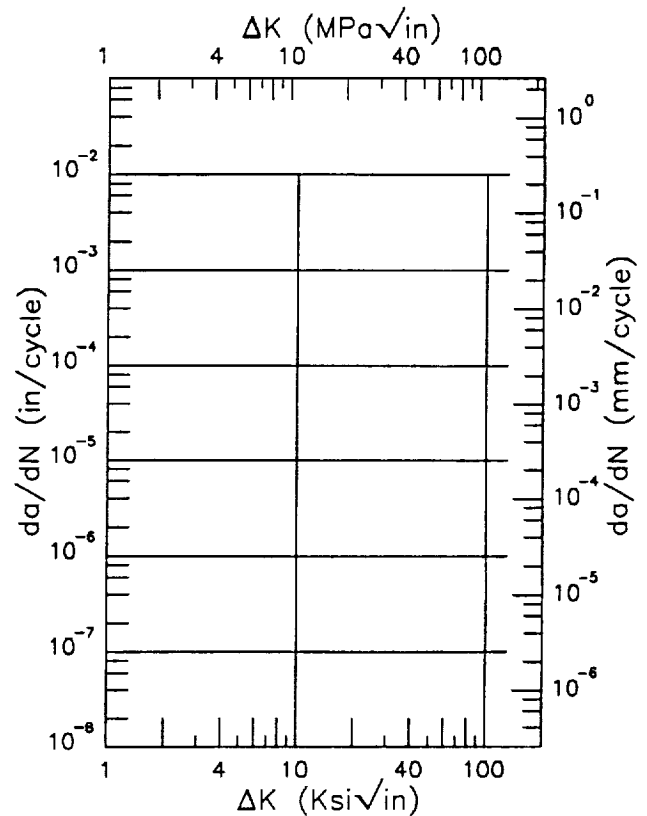
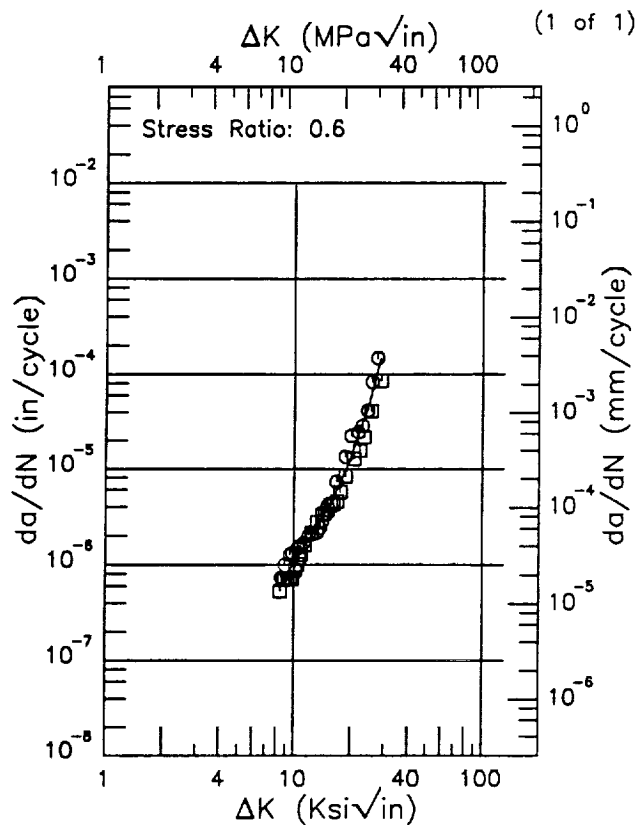
Yield Strength: 142 ksi  
 Ult. Strength:  
 Specimen Thk: 0.248 - 0.251 in.  
 Specimen Width: 2 - 2.002 in.  
 Ref: F22



R | 6-2-2-2-2 |

Condition/Ht: TRIPLEX SOLUTION HTA  
 Form: 2 - 6 in. Plate  
 Specimen Type: CT  
 Orientation: T-L  
 Frequency: 2 Hz  
 Environment: HHA; RT


Yield Strength: 142 ksi  
 Ult. Strength:  
 Specimen Thk: 0.247 - 0.25 in.  
 Specimen Width: 2 - 2.001 in.  
 Ref: F22




$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
8.40 (min)	0.623
9.	0.774
10.	1.06
13.	2.31
16.	4.78
20.	13.2
25.	50.8
28.61 (max)	147.

$\Delta K$  (Ksi $\sqrt{\text{in}}$ )       $da/dN$  ( $10^{-6}$  in/cycle)

RMS %  
 Error  
 22.96

Life Prediction Ratio Summary  
  
 0. .5 .8 1.25 2.

RMS %  
 Error

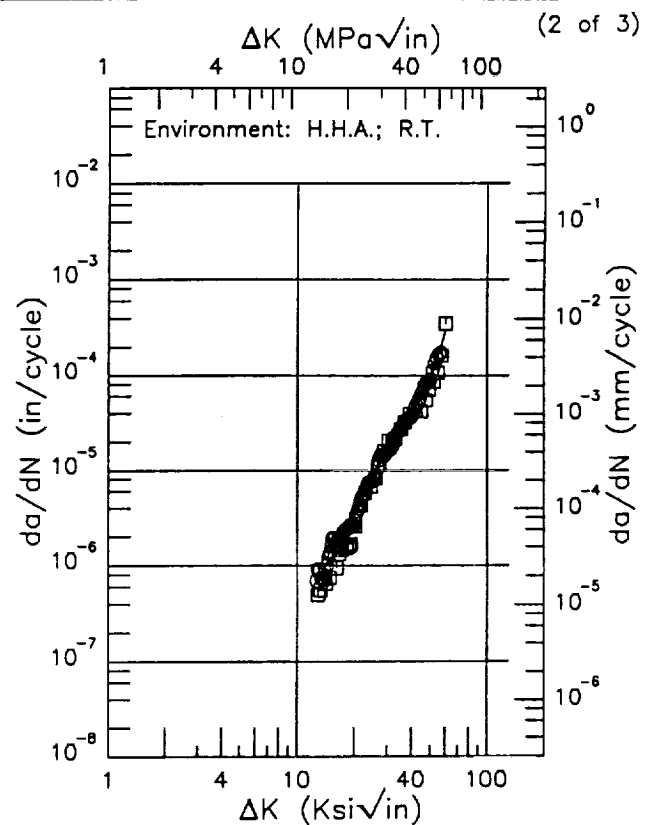
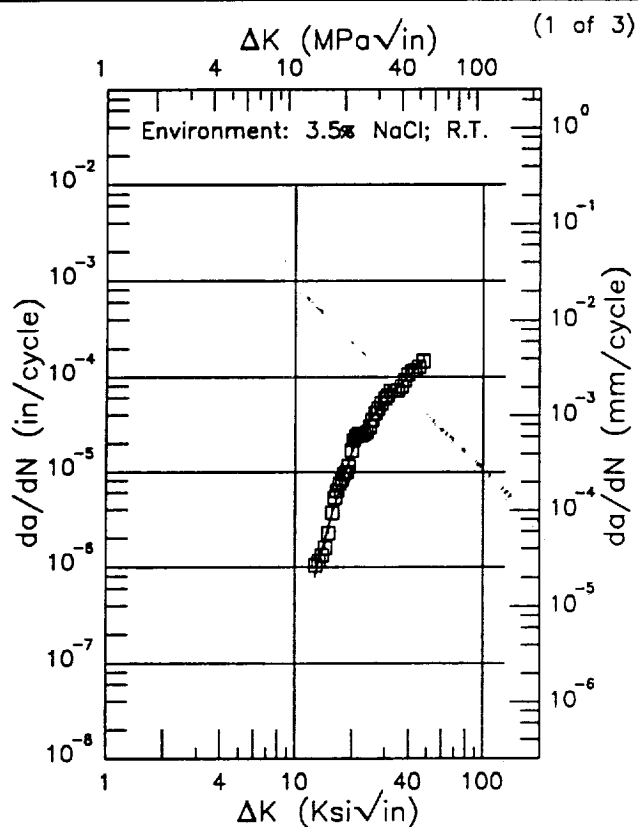
Life Prediction Ratio Summary  
  
 0. .5 .8 1.25 2.

E1-14

E 6-2-2-2-2

Condition/Ht: TRIPLEX SOLUTION HTA  
 Form: 6 in. Plate  
 Specimen Type: CT  
 Orientation: T-L  
 Stress Ratio: 0.05  
 Frequency: 2 Hz

Yield Strength: 142 ksi  
 Ult. Strength:  
 Specimen Thk: 0.24 - 0.251 in.  
 Specimen Width: 1.996 - 2.003 in.  
 Ref: F22



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ (10 <sup>-6</sup> in/cycle)
12.75 (min)	0.800
13.	0.922
16.	4.19
20.	16.2
25.	36.1
30.	54.1
35.	78.1
40.	103.
47.63 (max)	144.

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ (10 <sup>-6</sup> in/cycle)
12.61 (min)	0.685
13.	0.741
16.	1.42
20.	3.31
25.	8.12
30.	16.3
35.	27.5
40.	40.3
50.	87.3
60.	283.
60.24 (max)	293.

RMS %  
 Error  
 12.26

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS %  
 Error  
 16.75

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

E1-15

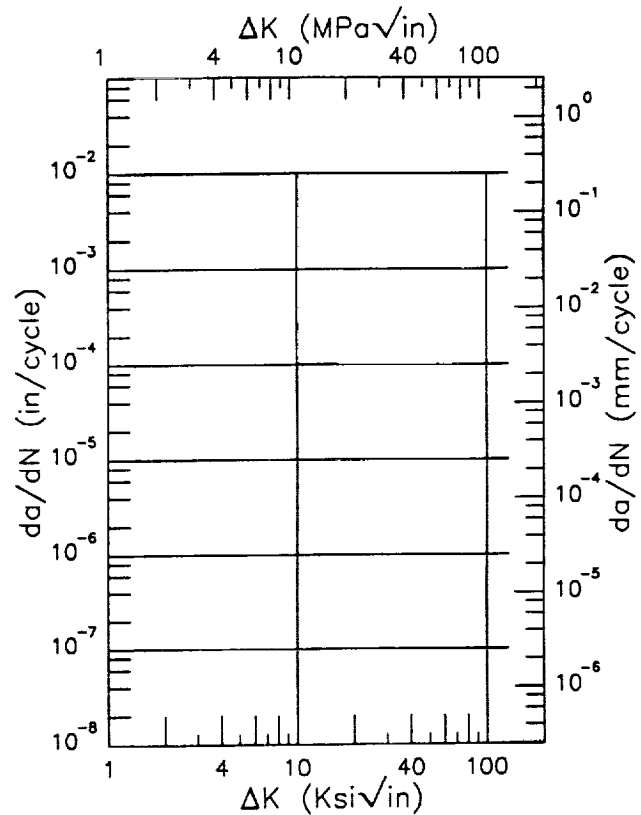
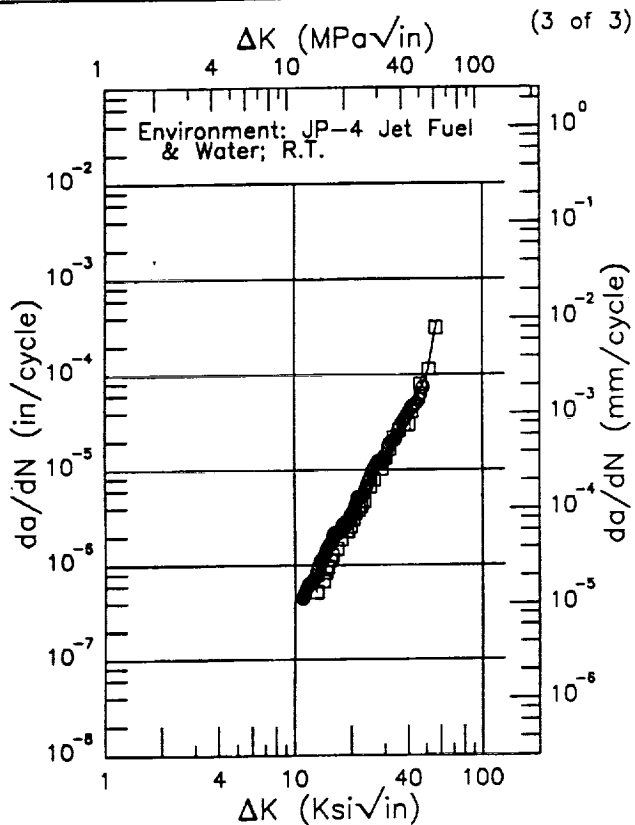
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Condition/Ht: TRIPLEX SOLUTION HTA  
 Form: 6 in. Plate  
 Specimen Type: CT  
 Orientation: T-L  
 Stress Ratio: 0.05  
 Frequency: 2 Hz

Yield Strength: 142 ksi  
 Ult. Strength:  
 Specimen Thk: 0.24 - 0.251 in.  
 Specimen Width: 1.996 - 2.003 in.  
 Ref: F22



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
10.94 (min)	0.449
13.	0.861
16.	1.73
20.	3.56
25.	7.70
30.	14.8
35.	24.9
40.	38.0
50.	94.8
55.94 (max)	308.

$\Delta K$  (Ksi√in)       $da/dN$  ( $10^{-6}$  in/cycle)

RMS %  
 Error  
 12.66

Life Prediction Ratio Summary

□ ○

0. .5 .8 1.25 2.

RMS %  
 Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.



E 6-2-2-2-2

Condition/Ht: TRIPLEX SOLUTION HTA

Form: 2 in. Plate

Specimen Type: CT

Orientation: T-L

Stress Ratio: 0.05

Frequency: 2 Hz

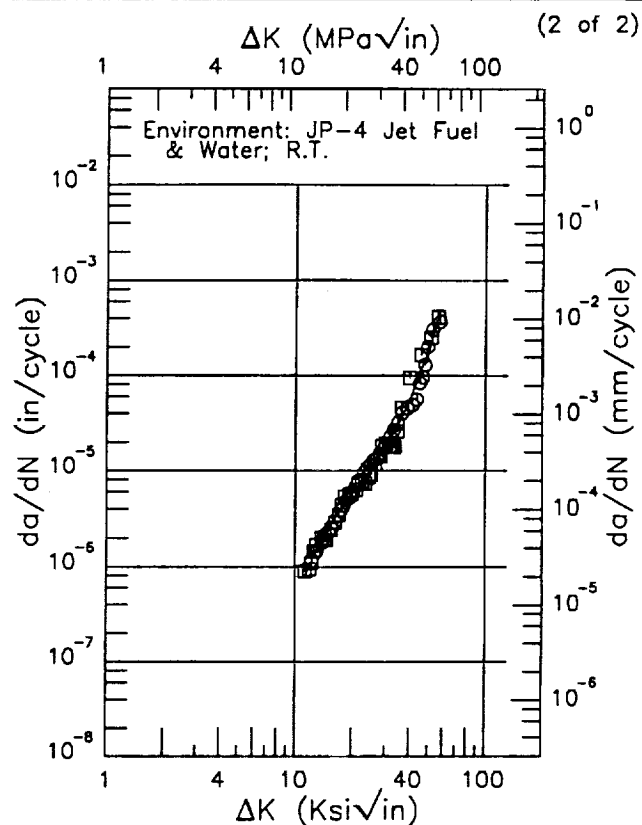
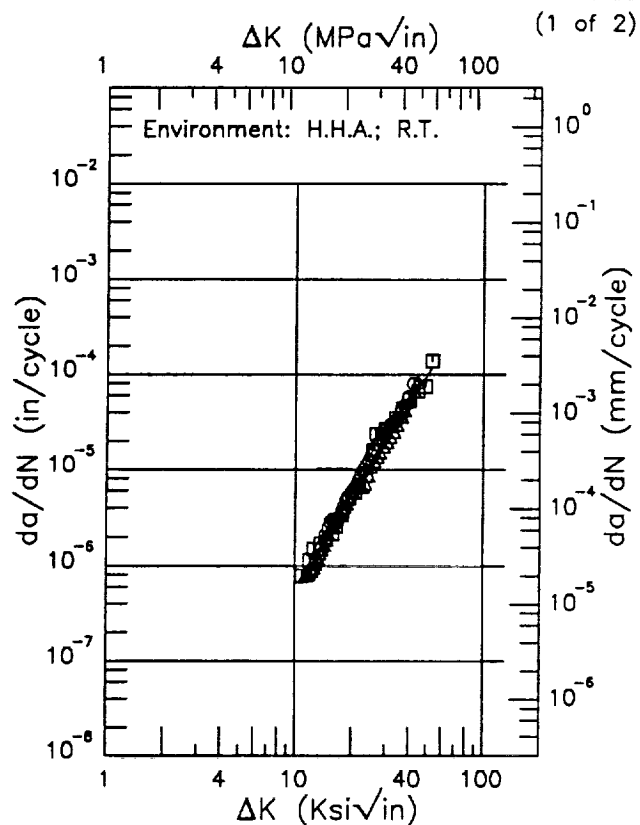
Yield Strength: 142 ksi

Ult. Strength:

Specimen Thk: 0.25 - 0.253 in.

Specimen Width: 2 - 2.007 in.

Ref: F22

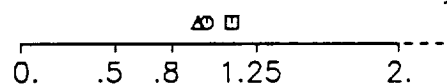


ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
10.81 (min)	0.663
13.	1.27
16.	2.62
20.	5.65
25.	12.2
30.	22.6
35.	36.7
40.	53.1
50.	95.6
52.88 (max)	115.

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
11.26 (min)	0.797
13.	1.48
16.	3.03
20.	5.72
25.	10.4
30.	18.0
35.	31.1
40.	54.8
50.	185.
57.49 (max)	486.

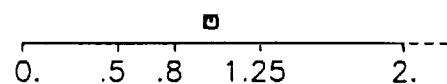
RMS %  
Error  
13.58

Life Prediction Ratio Summary



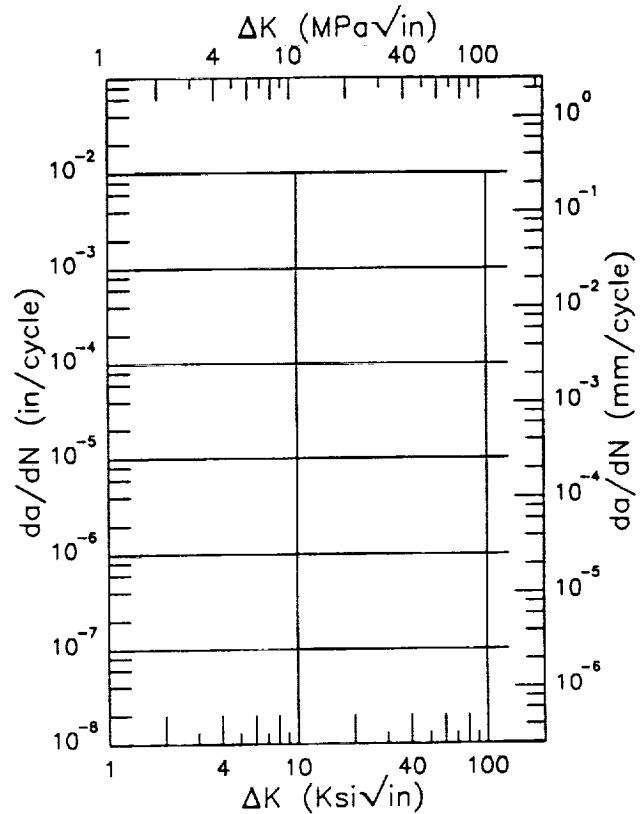
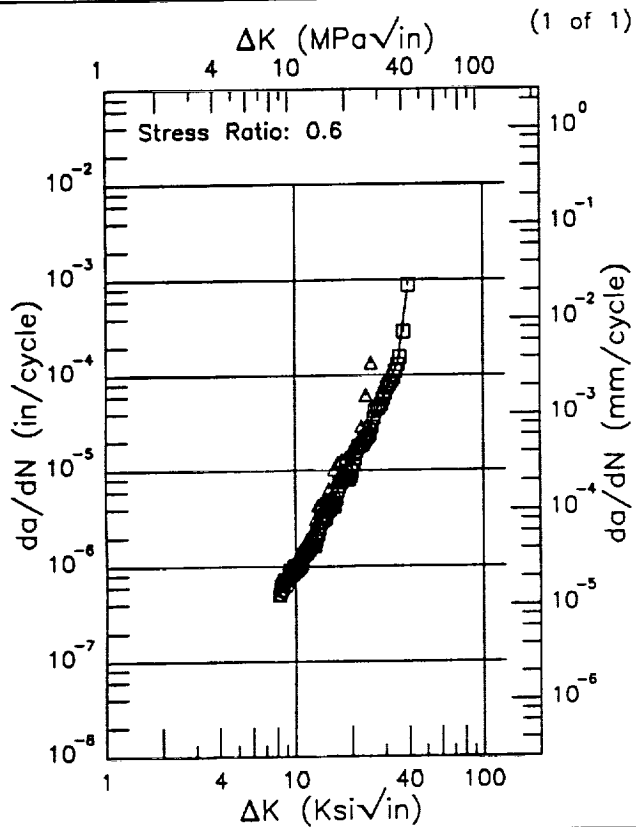
RMS %  
Error  
15.94

Life Prediction Ratio Summary



Condition/Ht: TRIPLEX SOLUTION HTA  
 Form: 6 in. Plate  
 Specimen Type: CT  
 Orientation: S-L  
 Frequency: 2 Hz  
 Environment: HHA; RT

Yield Strength: 142 ksi  
 Ult. Strength:  
 Specimen Thk: 0.25 - 0.251 in.  
 Specimen Width: 1.997 - 2.001 in.  
 Ref: F22

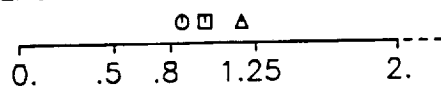


$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
8.19 (min)	0.570
9.	0.737
10.	1.00
13.	2.39
16.	5.23
20.	13.1
25.	33.1
30.	62.3
35.	141.
39.49 (max)	784.

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
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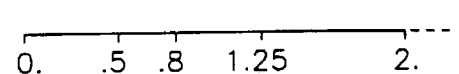
RMS %  
 Error  
 35.30

Life Prediction Ratio Summary



RMS %  
 Error

Life Prediction Ratio Summary

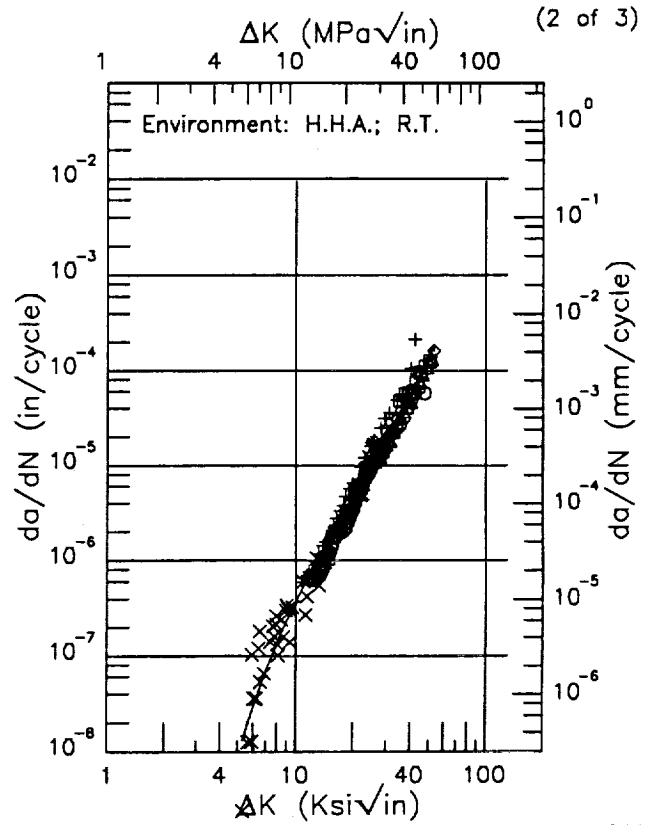
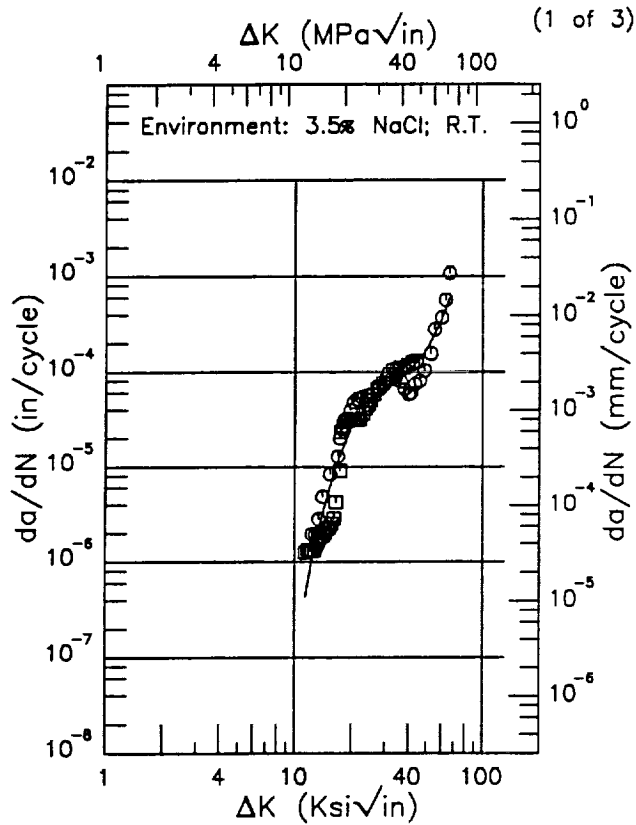


E

6-2-2-2-2

Condition/Ht: TRIPLEX SOLUTION HTA  
 Form: 6 in. Plate  
 Specimen Type: CT  
 Orientation: S-L  
 Stress Ratio: 0.05  
 Frequency: 2 Hz

Yield Strength: 142 ksi  
 Ult. Strength:  
 Specimen Thk: 0.247 - 0.251 in.  
 Specimen Width: 1.999 - 2.003 in.  
 Ref: F22



$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
11.38 (min)	0.438
13.	1.80
16.	8.88
20.	26.0
25.	47.9
30.	65.1
35.	80.6
40.	99.4
50.	168.
60.	347.
66.09 (max)	591.

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
5.29 (min)	0.0132
6.	0.0291
7.	0.0693
8.	0.136
9.	0.236
10.	0.371
13.	1.03
16.	2.12
20.	4.43
25.	9.24
30.	17.3
35.	30.6
40.	52.1
50.	140.
52.98 (max)	186.

RMS %  
 Error  
 49.01

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

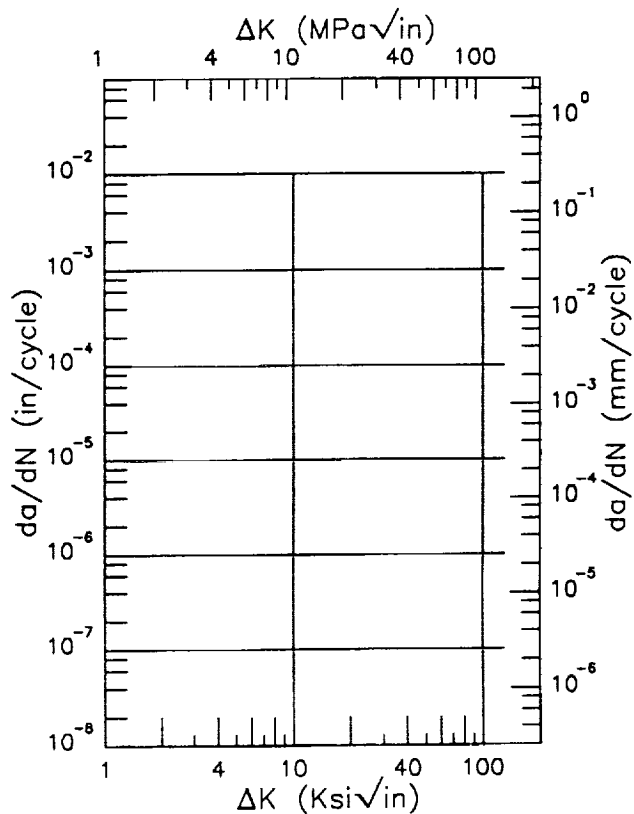
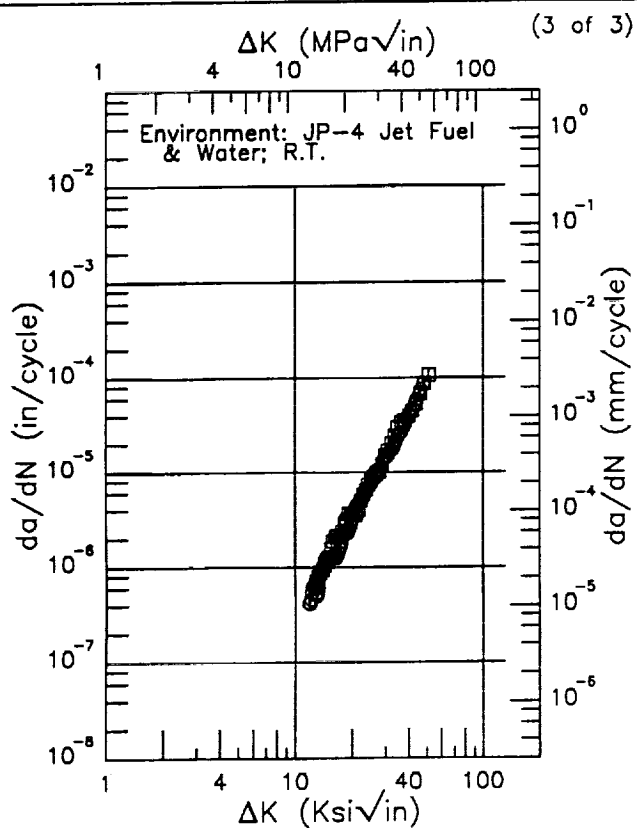
RMS %  
 Error  
 45.76

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

Condition/Ht: TRIPLEX SOLUTION HTA  
 Form: 6 in. Plate  
 Specimen Type: CT  
 Orientation: S-L  
 Stress Ratio: 0.05  
 Frequency: 2 Hz

Yield Strength: 142 ksi  
 Ult. Strength:  
 Specimen Thk: 0.247 - 0.251 in.  
 Specimen Width: 1.999 - 2.003 in.  
 Ref: F22



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
11.73 (min)	0.429
13.	0.659
16.	1.49
20.	3.39
25.	7.48
30.	14.3
35.	24.8
40.	40.8
50.	98.2
50.75 (max)	104.

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
--------------------------------------	-------------------------------

RMS %  
 Error  
 11.43

Life Prediction Ratio Summary  
 0. .5 .8 1.25 2.

RMS %  
 Error

Life Prediction Ratio Summary  
 0. .5 .8 1.25 2.

EF 6-2-2-2-2

Condition/Ht: TRIPLEX SOLUTION HTA

Form: 6 in. Plate

Specimen Type: CT

Orientation: S-L

Stress Ratio: 0.05

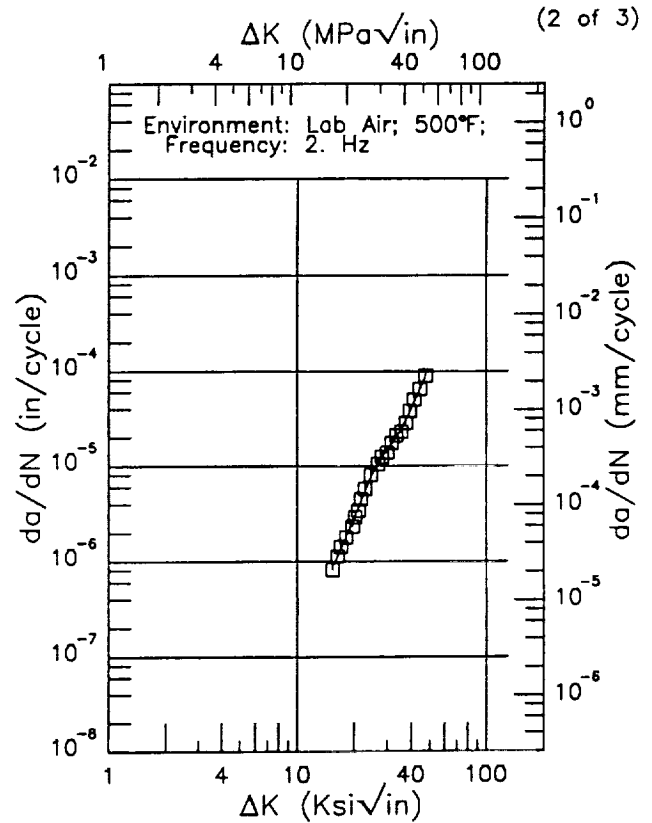
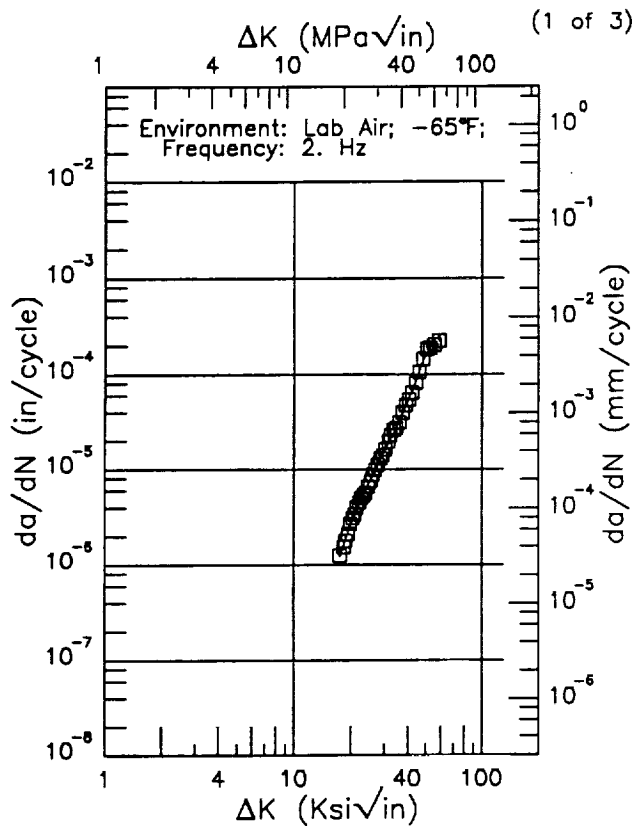
Yield Strength: 142 ksi

Ult. Strength:

Specimen Thk: 0.249 - 0.251 in.

Specimen Width: 2 - 2.001 in.

Ref: F22



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
17.41 (min)	1.22
20.	2.71
25.	7.48
30.	15.3
35.	28.6
40.	51.9
50.	160.
58.62 (max)	205.

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
15.32 (min)	0.879
16.	1.00
20.	2.86
25.	8.28
30.	14.9
35.	23.2
40.	39.5
47.41 (max)	86.9

RMS %  
Error  
5.18

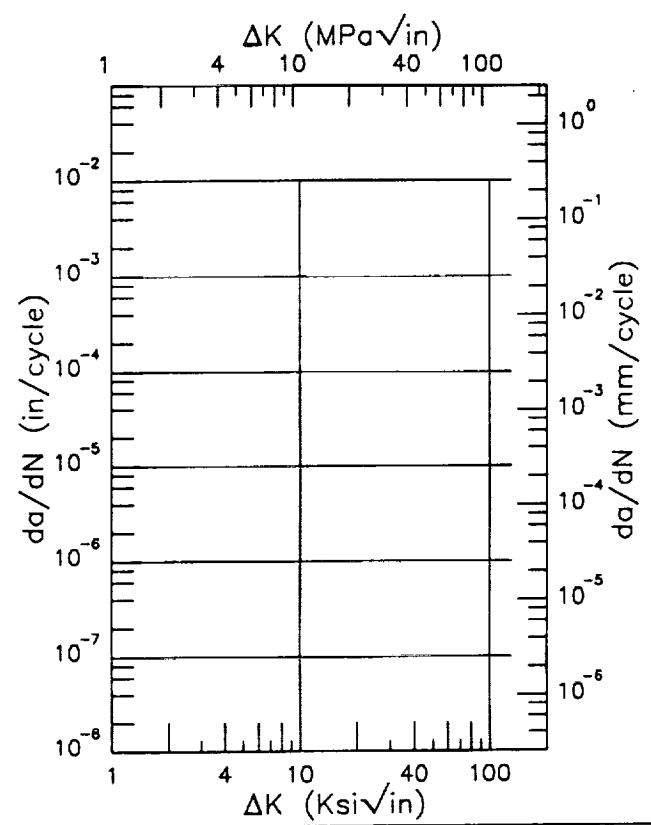
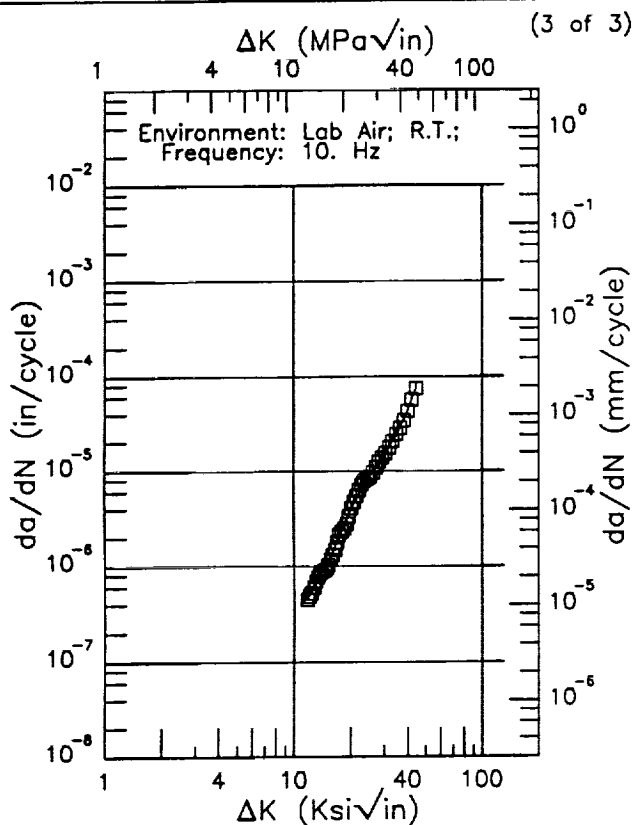
Life Prediction Ratio Summary  
0. .5 .8 1.25 2. ---

RMS %  
Error  
5.72

Life Prediction Ratio Summary  
0. .5 .8 1.25 2. ---

Condition/Ht: TRIPLEX SOLUTION HTA  
 Form: 6 in. Plate  
 Specimen Type: CT  
 Orientation: S-L  
 Stress Ratio: 0.05

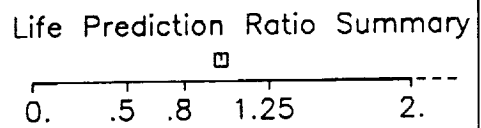
Yield Strength: 142 ksi  
 Ult. Strength:  
 Specimen Thk: 0.249 - 0.251 in.  
 Specimen Width: 2 - 2.001 in.  
 Ref: F22



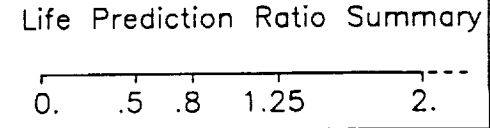
$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
11.70 (min)	0.494
13.	0.629
16.	1.41
20.	3.98
25.	8.97
30.	14.7
35.	24.4
40.	44.0
44.14 (max)	74.0

$\Delta K$  (Ksi $\sqrt{\text{in}}$ )       $da/dN$  ( $10^{-6}$  in/cycle)

RMS %  
 Error  
 6.18



RMS %  
 Error

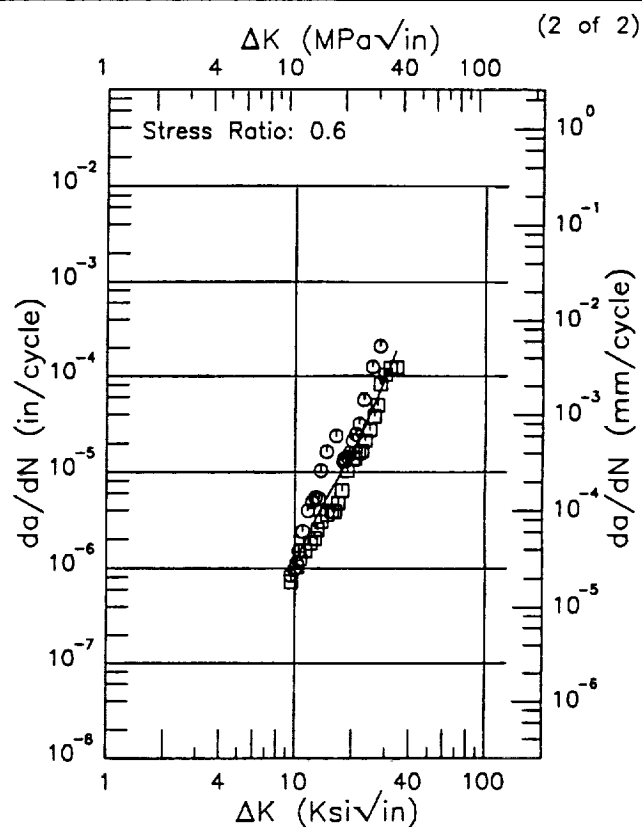
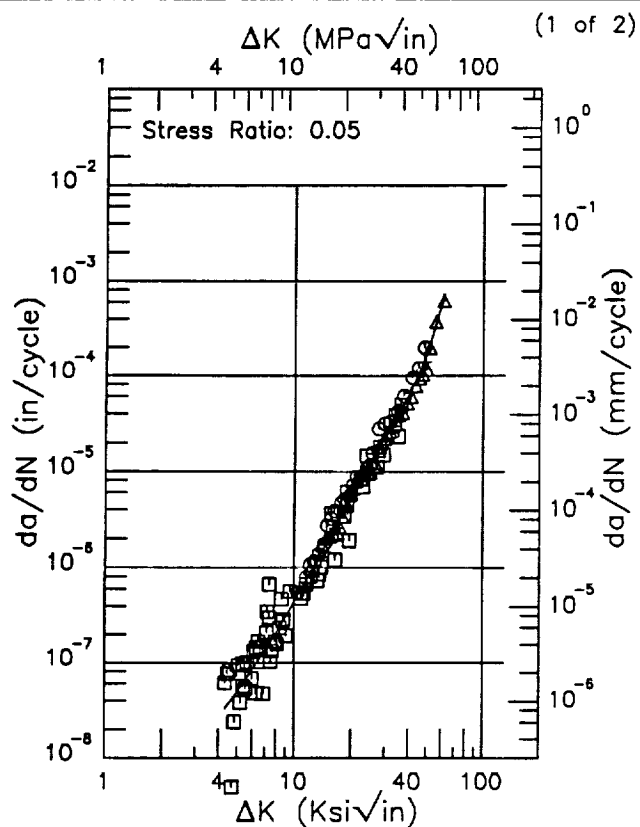


R

6-2-2-2-2

Condition/Ht: TRIPLEX SOLUTION HTA  
 Form: Forging  
 Specimen Type: CT  
 Orientation: L-T  
 Frequency: 2 Hz  
 Environment: HHA; RT

Yield Strength: 142 ksi  
 Ult. Strength:  
 Specimen Thk: 0.25 - 0.253 in.  
 Specimen Width: 2 - 2.005 in.  
 Ref: F22



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
4.31 (min)	0.0330
5.	0.0490
6.	0.0830
7.	0.134
8.	0.206
9.	0.307
10.	0.441
13.	1.12
16.	2.39
20.	5.41
25.	12.1
30.	23.0
35.	38.5
40.	61.2
50.	167.
60.	583.
60.82 (max)	655.

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
9.40 (min)	0.861
10.	1.14
13.	3.35
16.	7.19
20.	16.3
25.	40.2
30.	94.9
33.90 (max)	184.

RMS %  
 Error  
 43.53

Life Prediction Ratio Summary  
 + Δφ  
 0. .5 .8 1.25 2. ---

RMS %  
 Error  
 71.06

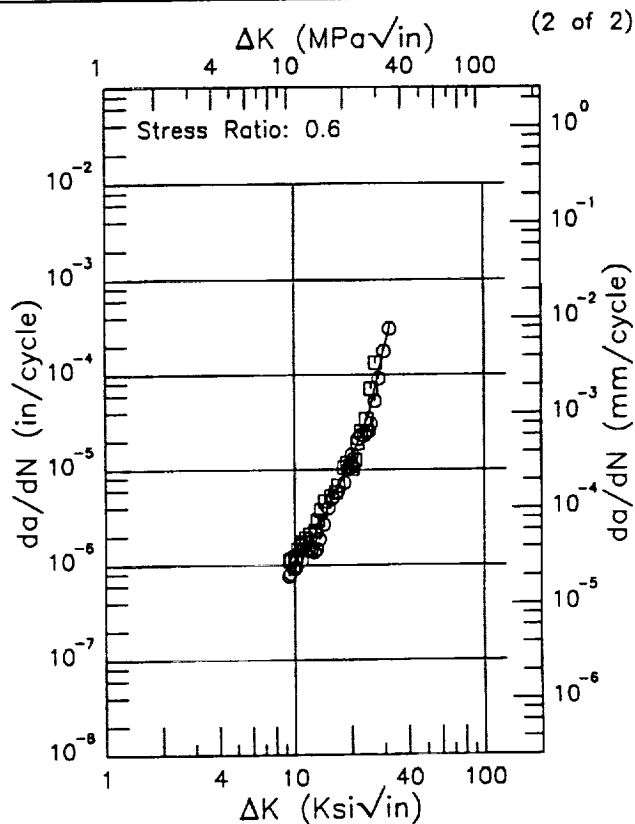
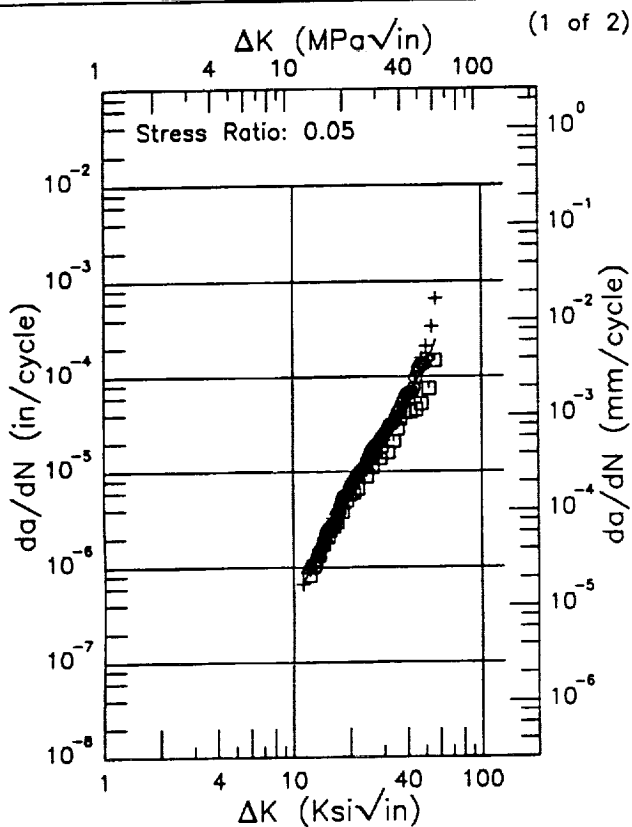
Life Prediction Ratio Summary  
 □ ○  
 0. .5 .8 1.25 2. ---

6-2-2-2-2

R

Condition/Ht: TRIPLEX SOLUTION HTA  
 Form: Forging  
 Specimen Type: CT  
 Orientation: L-T  
 Frequency: 2 Hz  
 Environment: JP4 + H2O; RT

Yield Strength: 142 ksi  
 Ult. Strength:  
 Specimen Thk: 0.25 - 0.254 in.  
 Specimen Width: 2 - 2.002 in.  
 Ref: F22



ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
11.15 (min)	0.638
13.	1.25
16.	2.86
20.	6.34
25.	13.2
30.	23.3
35.	37.6
40.	57.6
50.	134.
56.46 (max)	239.

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
9.28 (min)	1.02
10.	1.11
13.	2.25
16.	5.03
20.	12.7
25.	39.3
30.	193.
31.87 (max)	298.

RMS %  
 Error  
 21.50

Life Prediction Ratio Summary

0. .5 .8 1.25 2.---

RMS %  
 Error  
 22.68

Life Prediction Ratio Summary

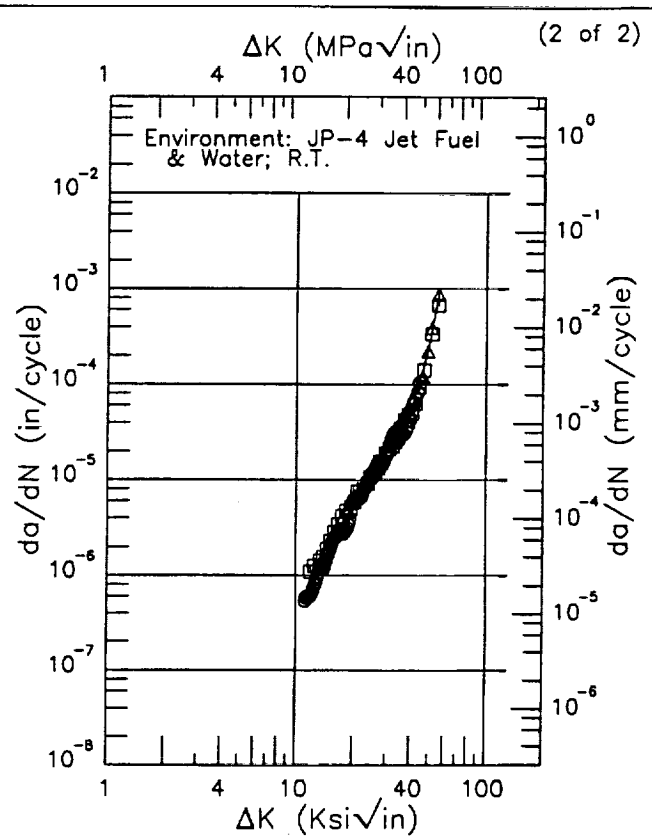
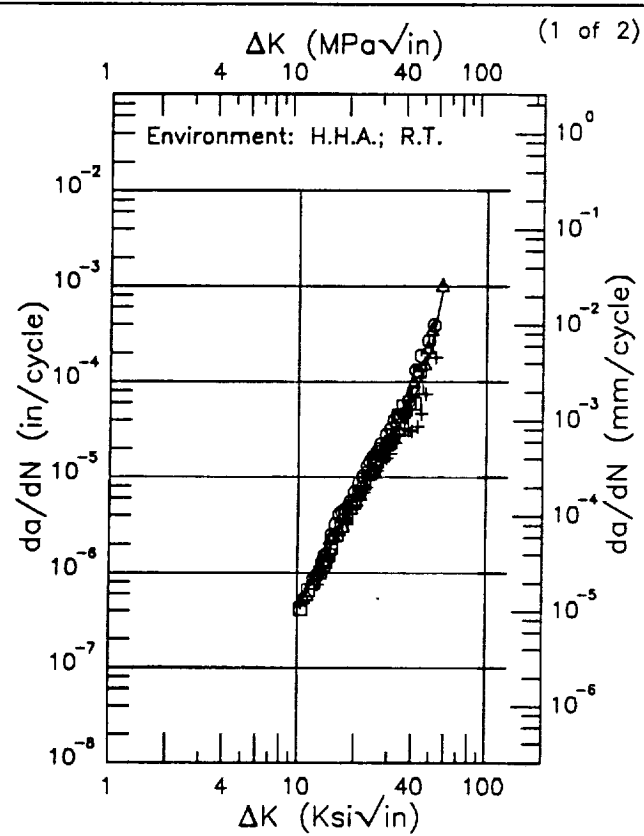
0. .5 .8 1.25 2.---



E | 6-2-2-2-2 |

Condition/Ht: TRIPLEX SOLUTION HTA  
 Form: Forging  
 Specimen Type: CT  
 Orientation: S-L  
 Stress Ratio: 0.05  
 Frequency: 2 Hz

Yield Strength: 142 ksi  
 Ult. Strength:  
 Specimen Thk: 0.247 - 0.253 in.  
 Specimen Width: 2.001 - 2.003 in.  
 Ref: F22



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
10.31 (min)	0.450
13.	1.14
16.	2.58
20.	5.97
25.	13.0
30.	23.2
35.	38.3
40.	62.9
50.	206.
57.48 (max)	870.

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
11.18 (min)	0.504
13.	0.998
16.	2.30
20.	5.15
25.	11.0
30.	20.0
35.	32.0
40.	51.7
50.	264.
55.77 (max)	880.

RMS % Error	Life Prediction Ratio Summary
24.66	+ $\Delta D$
	0. .5 .8 1.25 2.

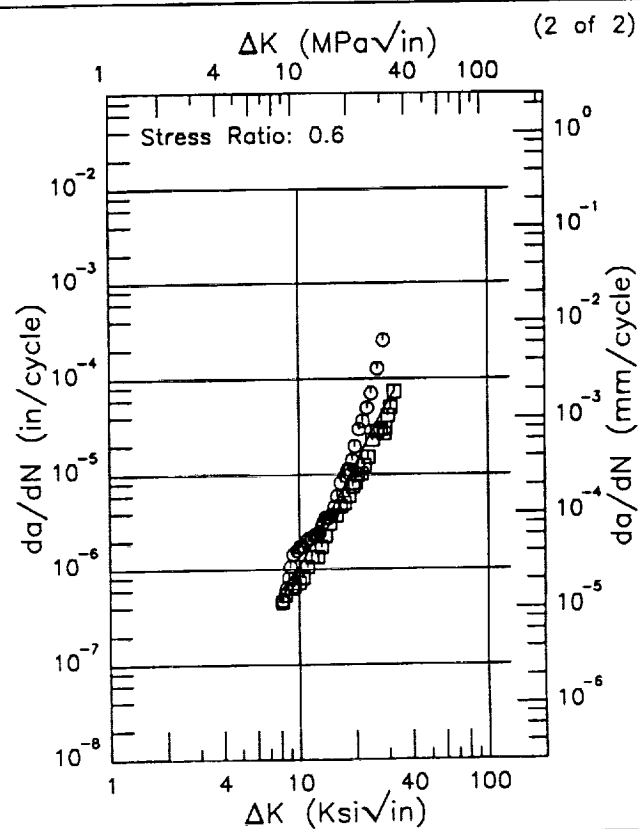
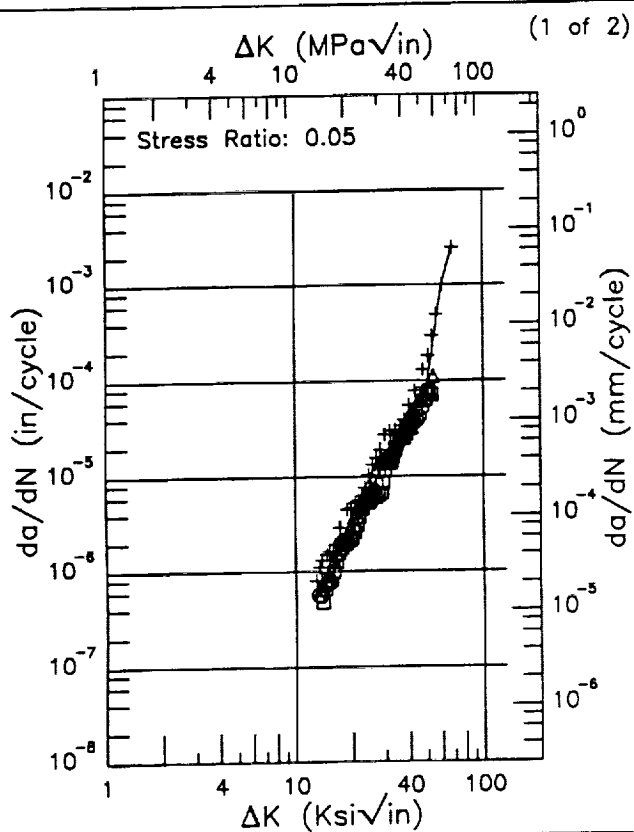
RMS % Error	Life Prediction Ratio Summary
14.56	$\square \Delta \square$
	0. .5 .8 1.25 2.

6-2-2-2-2

R

Condition/Ht: TRIPLEX SOLUTION HTA  
 Form:  
 Specimen Type: CT  
 Orientation: L-T  
 Frequency: 2 Hz  
 Environment: HHA; RT

Yield Strength: 142 ksi  
 Ult. Strength:  
 Specimen Thk: 0.346 - 0.352 in.  
 Specimen Width: 2.999 - 3.005 in.  
 Ref: F22

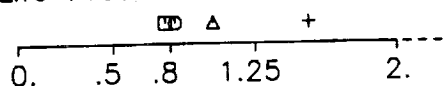


$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
12.77 (min)	0.607
13.	0.642
16.	1.30
20.	3.06
25.	7.31
30.	14.3
35.	23.9
40.	35.6
50.	94.9
60.	960.
68.00 (max)	2437.

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
8.08 (min)	0.614
9.	0.801
10.	1.08
13.	2.56
16.	5.53
20.	13.1
25.	30.7
30.	59.1
32.04 (max)	73.9

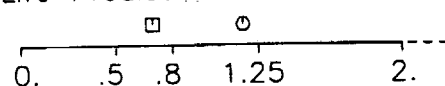
RMS %  
 Error  
 32.19

Life Prediction Ratio Summary



RMS %  
 Error  
 73.23

Life Prediction Ratio Summary



R

6-2-2-2-2

Condition/Ht: TRIPLEX SOLUTION HTA

Form:

Specimen Type: CT

Orientation: L-T

Frequency: 2 Hz

Environment: JP4 + H2O; RT

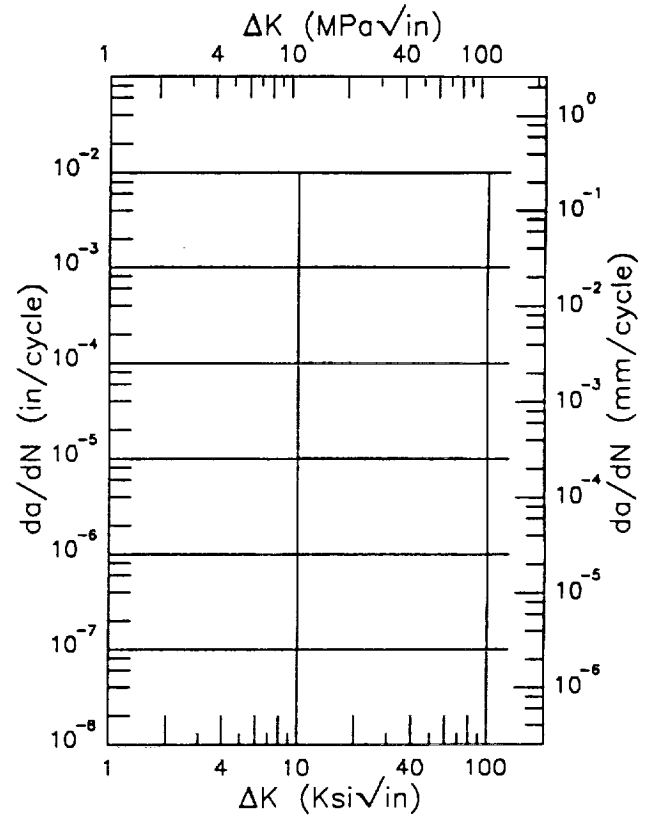
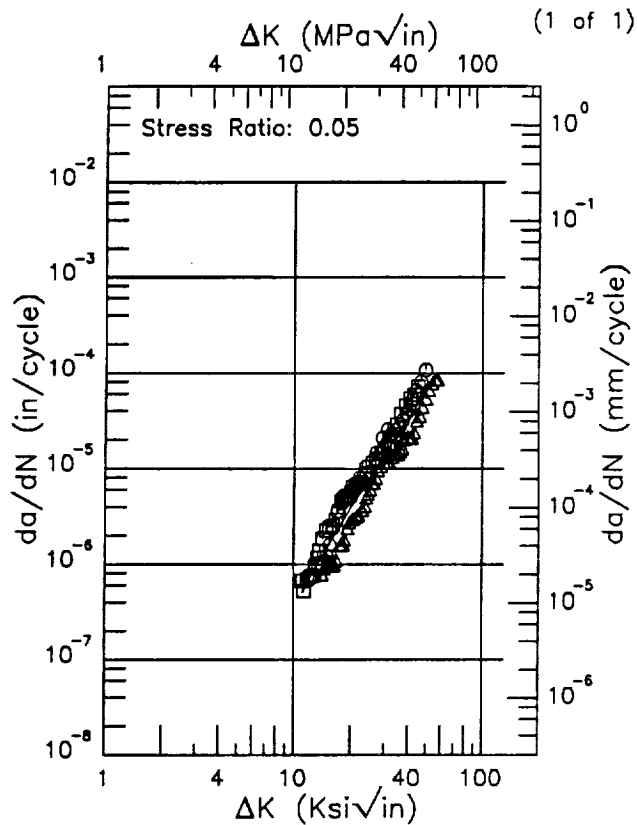
Yield Strength: 142 ksi

Ult. Strength:

Specimen Thk: 0.348 - 0.35 in.

Specimen Width: 2.999 - 3.002 in.

Ref: F22



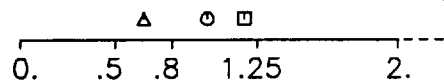
$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
11.10 (min)	0.511
13.	0.909
16.	1.87
20.	3.94
25.	8.03
30.	14.1
35.	22.5
40.	33.5
50.	64.5
57.37 (max)	96.4

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
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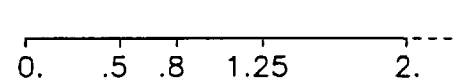
RMS %  
Error

35.92

Life Prediction Ratio Summary

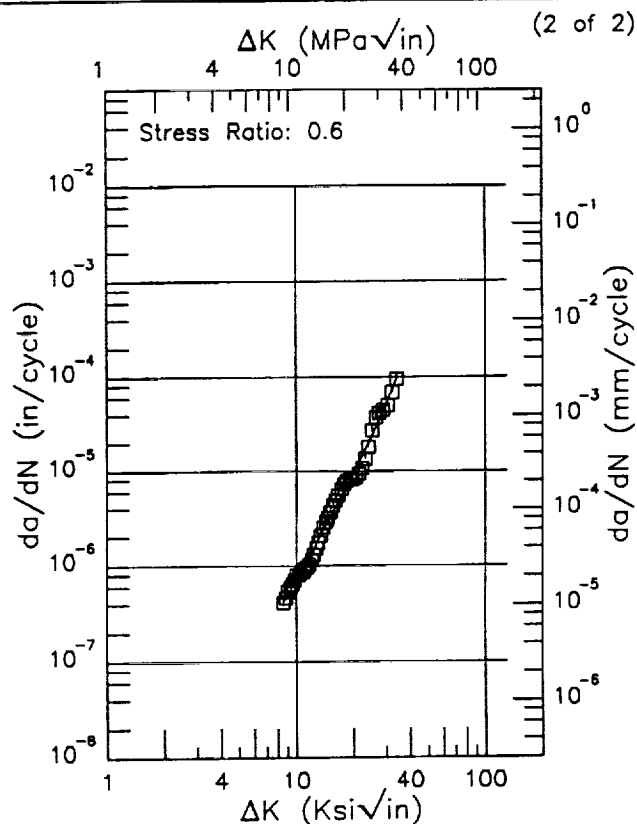
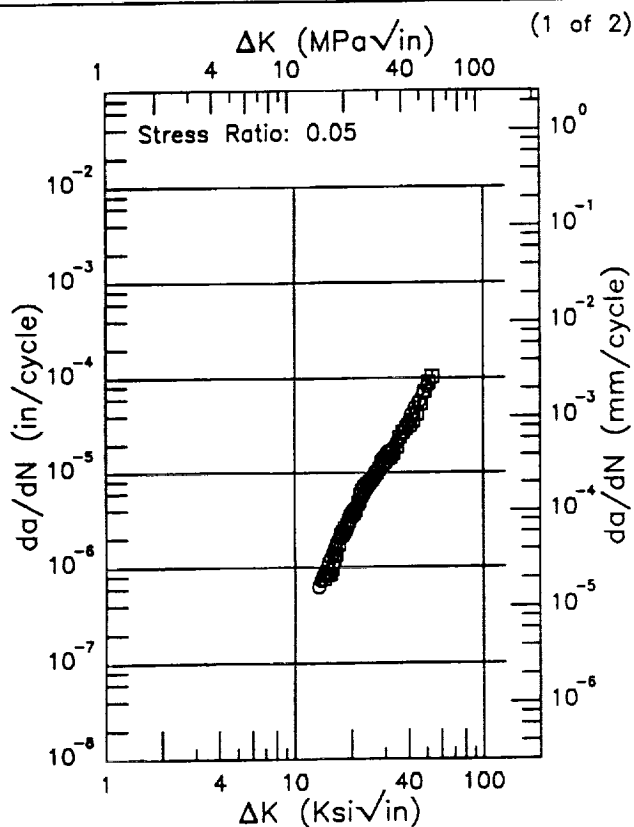
RMS %  
Error

Life Prediction Ratio Summary



Condition/Ht: TRIPLEX SOLUTION HTA  
 Form:  
 Specimen Type: CT  
 Orientation: L-T  
 Frequency: 10 Hz  
 Environment: LAB AIR; RT

Yield Strength: 142 ksi  
 Ult. Strength:  
 Specimen Thk: 0.248 - 0.25 in.  
 Specimen Width: 2.001 - 2.003 in.  
 Ref: F22



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
13.24 (min)	0.633
16.	1.34
20.	3.55
25.	8.10
30.	13.5
35.	21.0
40.	32.9
50.	79.9
53.40 (max)	105.

$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
8.55 (min)	0.420
9.	0.497
10.	0.709
13.	1.82
16.	3.98
20.	9.47
25.	22.9
30.	51.2
33.84 (max)	94.8

RMS %  
 Error  
 8.94

Life Prediction Ratio Summary  
  
 0. .5 .8 1.25 2.

RMS %  
 Error  
 13.40

Life Prediction Ratio Summary  
  
 0. .5 .8 1.25 2.

R

6-2-2-2-2

Condition/Ht: TRIPLEX SOLUTION HTA

Form:

Specimen Type: CT

Orientation: T-L

Frequency: 2 Hz

Environment: HHA; RT

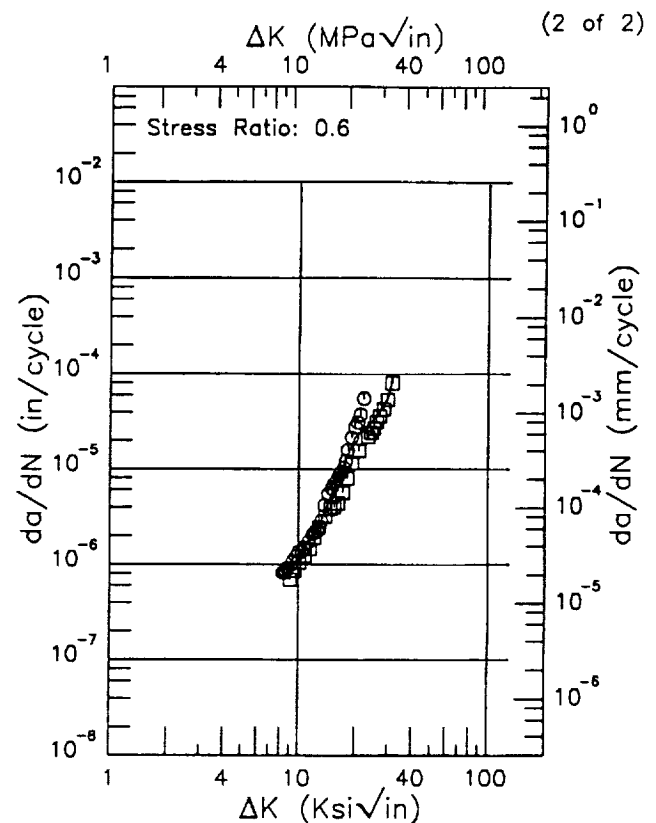
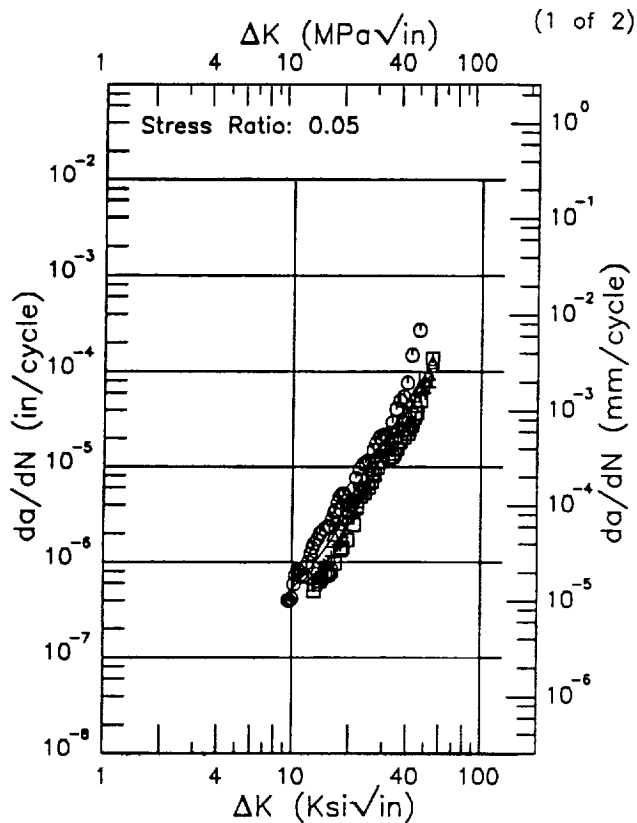
Yield Strength: 142 ksi

Ult. Strength:

Specimen Thk: 0.346 - 0.351 in.

Specimen Width: 2.999 - 3.004 in.

Ref: F22

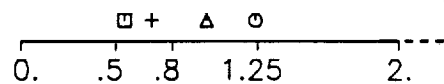


ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
9.46 (min)	0.478
10.	0.526
13.	0.943
16.	1.70
20.	3.47
25.	7.50
30.	14.3
35.	24.4
40.	38.3
50.	77.3
54.34 (max)	98.2

ΔK (Ksi√in)	da/dN (10 <sup>-6</sup> in/cycle)
8.21 (min)	0.724
9.	0.909
10.	1.17
13.	2.57
16.	7.31
20.	21.9
25.	33.1
30.	57.7
31.08 (max)	86.0

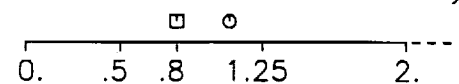
RMS %  
Error  
52.27

Life Prediction Ratio Summary



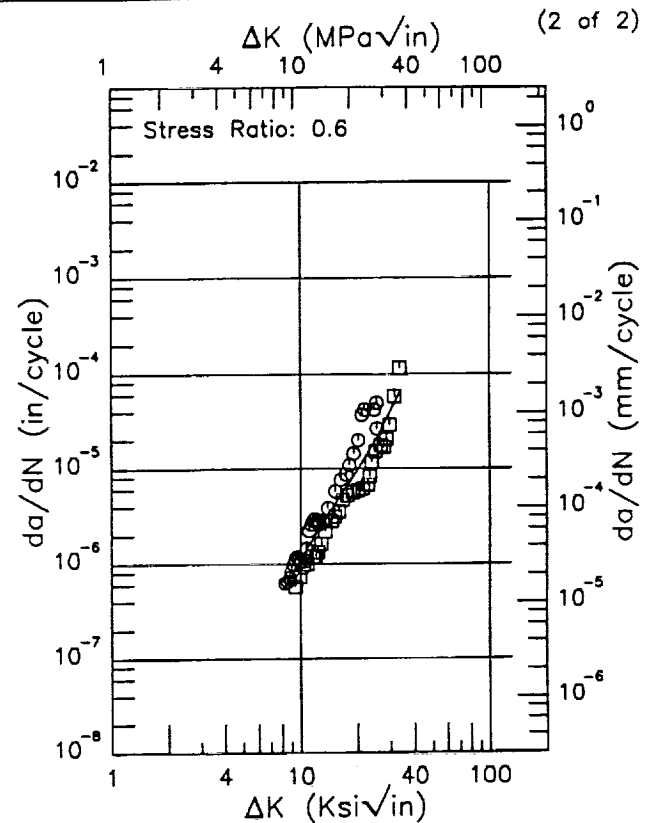
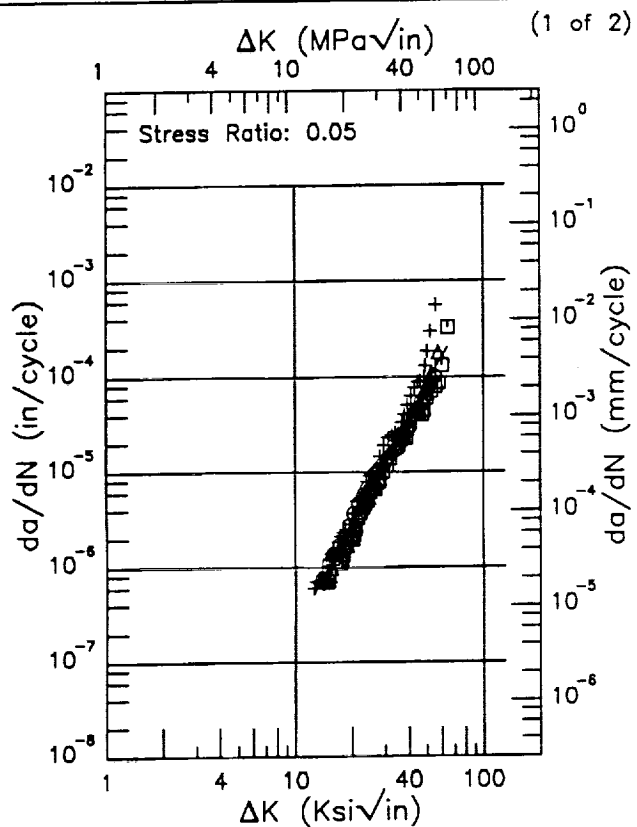
RMS %  
Error  
25.29

Life Prediction Ratio Summary



Condition/Ht: TRIPLEX SOLUTION HTA  
 Form:  
 Specimen Type: CT  
 Orientation: S-L  
 Frequency: 2 Hz  
 Environment: HHA; RT

Yield Strength: 142 ksi  
 Ult. Strength:  
 Specimen Thk: 0.347 - 0.349 in.  
 Specimen Width: 2.999 - 3.003 in.  
 Ref: F22

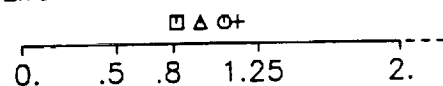


$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
12.45 (min)	0.522
13.	0.605
16.	1.25
20.	2.82
25.	6.46
30.	12.8
35.	22.8
40.	37.4
50.	84.2
60.	160.
64.39 (max)	204.

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
8.23 (min)	0.549
9.	0.776
10.	1.13
13.	2.65
16.	4.95
20.	9.74
25.	20.4
30.	40.6
33.31 (max)	63.1

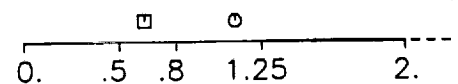
RMS %  
 Error  
 42.22

Life Prediction Ratio Summary



RMS %  
 Error  
 60.58

Life Prediction Ratio Summary



EF

6-2-2-2-2

Condition/Ht: TRIPLEX SOLUTION HTA

Form:

Specimen Type: CT

Orientation: S-L

Stress Ratio: 0.05

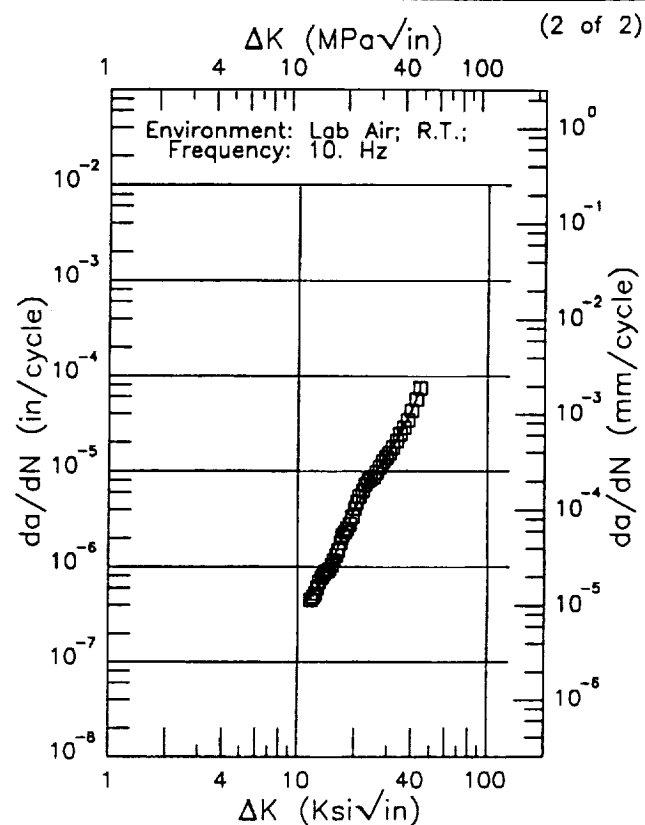
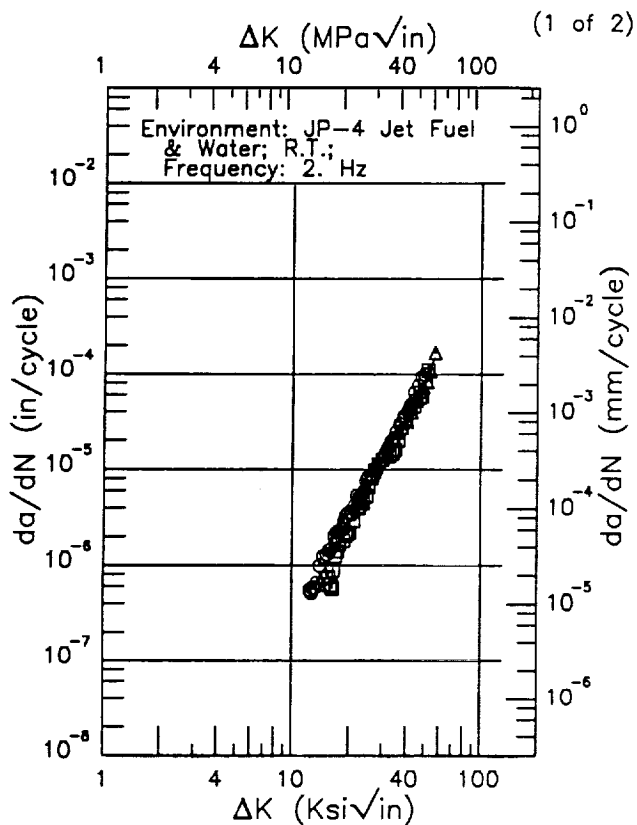
Yield Strength: 142 ksi

Ult. Strength:

Specimen Thk: 0.249 - 0.351 in.

Specimen Width: 2.001 - 3.004 in.

Ref: F22



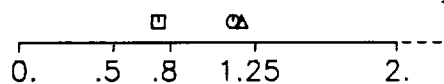
$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
12.37 (min)	0.517
13.	0.594
16.	1.19
20.	2.88
25.	7.01
30.	13.3
35.	21.9
40.	34.7
50.	87.7
56.32 (max)	150.

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
11.70 (min)	0.494
13.	0.629
16.	1.41
20.	3.98
25.	8.97
30.	14.7
35.	24.4
40.	44.0
44.14 (max)	74.0

RMS %  
Error

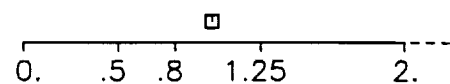
19.90

Life Prediction Ratio Summary

RMS %  
Error

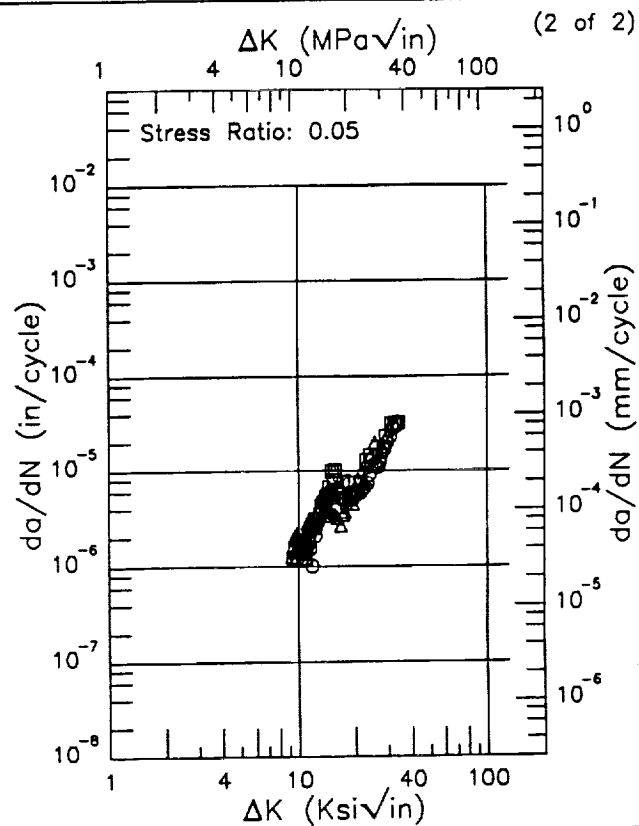
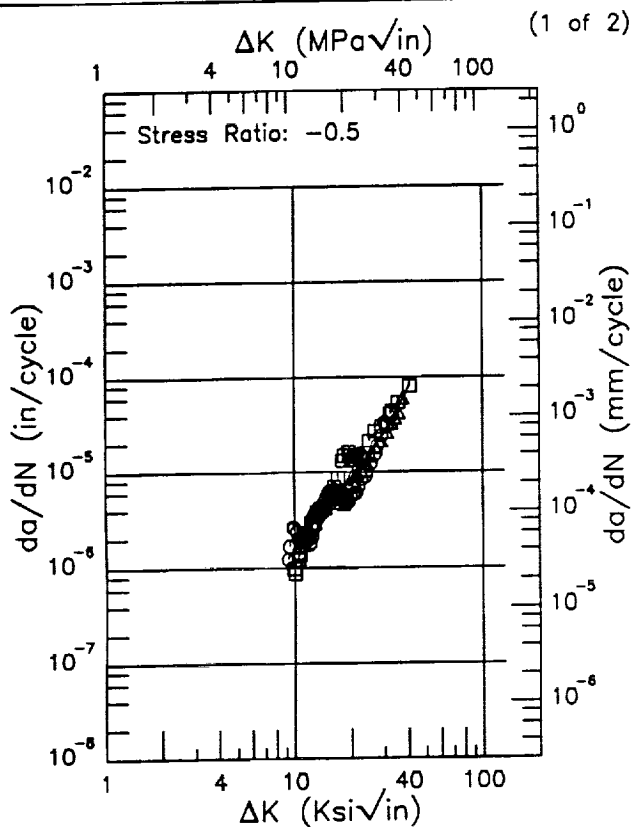
6.18

Life Prediction Ratio Summary



Condition/Ht: -99  
 Form: 6 in. Plate  
 Specimen Type: CCP (max load specified)  
 Orientation: L-T  
 Frequency: 2 Hz  
 Environment: HHA; RT

Yield Strength:  
 Ult. Strength:  
 Specimen Thk: 0.249 - 0.255 in.  
 Specimen Width: 2.981 - 2.99 in.  
 Ref: F22

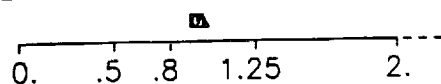


$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
9.25 (min)	1.28
10.	1.63
13.	3.24
16.	5.26
20.	8.77
25.	15.4
30.	26.3
35.	44.8
40.	76.5
41.04 (max)	85.5

$\Delta K$ (Ksi√in)	$da/dN$ ( $10^{-6}$ in/cycle)
9.13 (min)	1.08
10.	1.60
13.	3.35
16.	4.74
20.	6.62
25.	10.9
30.	21.1
33.82 (max)	39.1

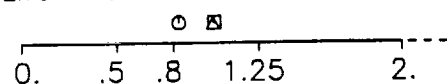
RMS %  
 Error  
 28.40

Life Prediction Ratio Summary



RMS %  
 Error  
 30.75

Life Prediction Ratio Summary

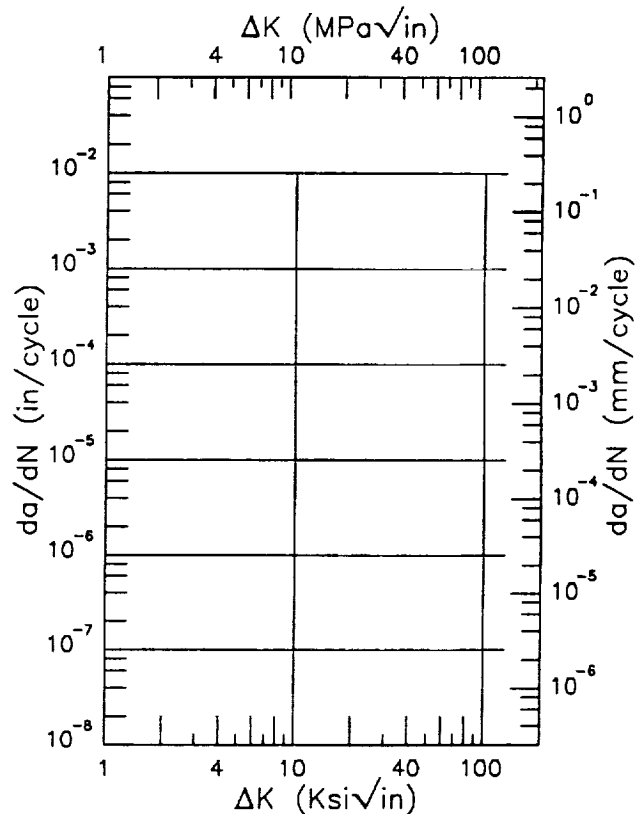
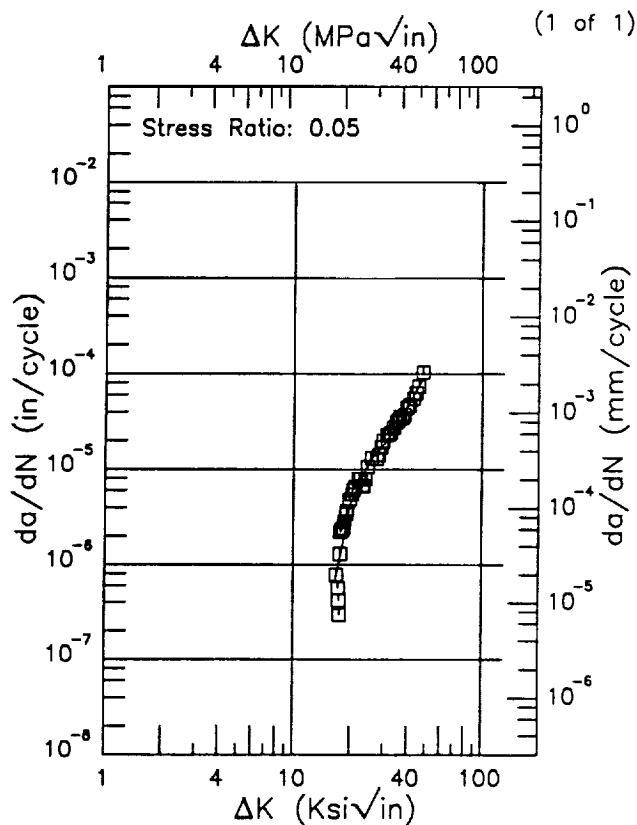




R 6-2-2-2-2

Condition/Ht: -99  
 Form: 6 in. Plate  
 Specimen Type: CCP (max load specified)  
 Orientation: L-T  
 Frequency: 2 Hz  
 Environment: JP4; RT

Yield Strength:  
 Ult. Strength:  
 Specimen Thk: 0.253 in.  
 Specimen Width: 2.987 in.  
 Ref: F22



$\Delta K$ (Ksi $\sqrt{\text{in}}$ )	$da/dN$ ( $10^{-6}$ in/cycle)
16.79 (min)	0.706
20.	4.30
25.	12.2
30.	18.3
35.	27.9
40.	46.2
48.32 (max)	90.1

$\Delta K$  (Ksi $\sqrt{\text{in}}$ )       $da/dN$  ( $10^{-6}$  in/cycle)

RMS %  
 Error  
 29.87

Life Prediction Ratio Summary  
 □  
 0. .5 .8 1.25 2.---

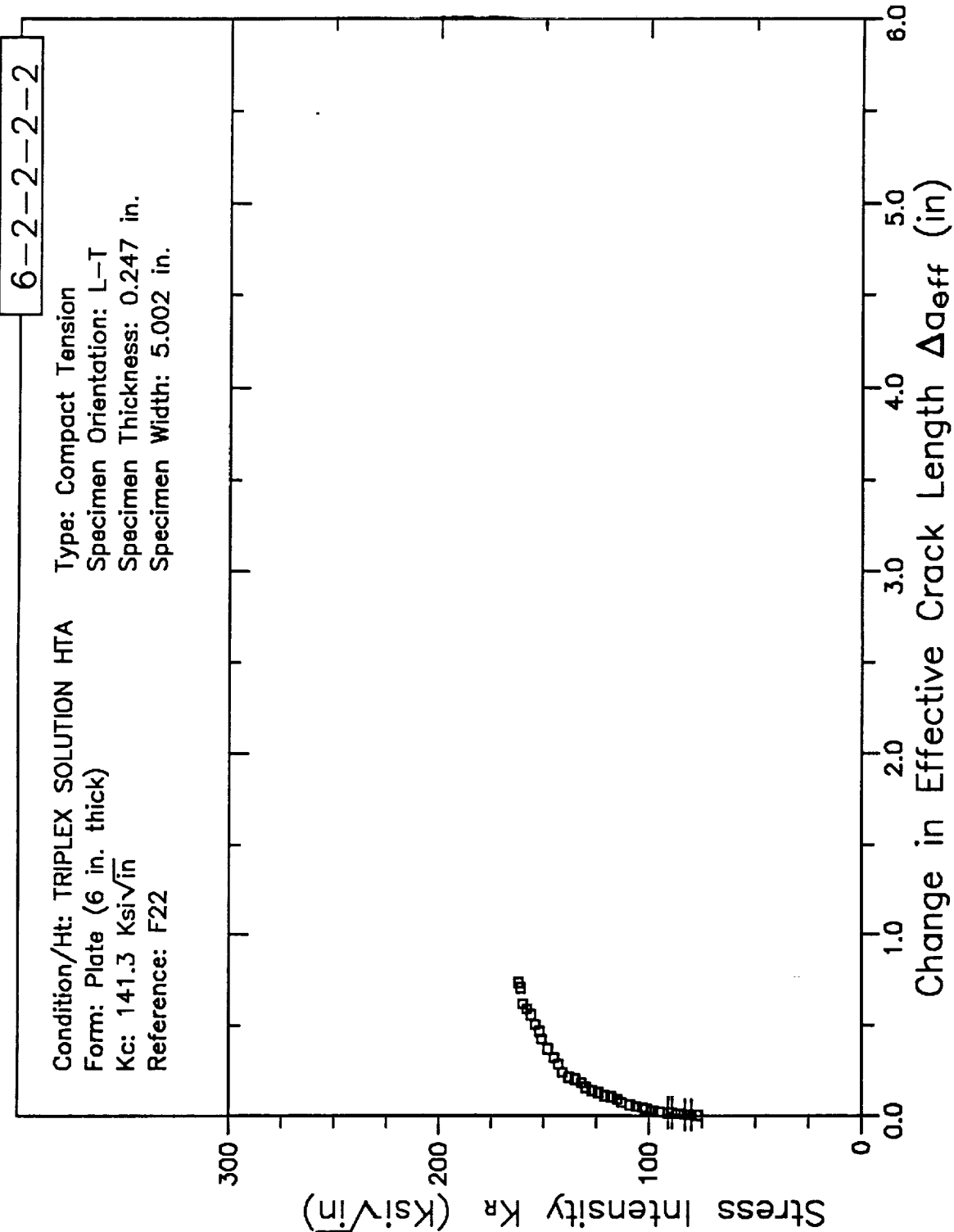
RMS %  
 Error

Life Prediction Ratio Summary  
 0. .5 .8 1.25 2.---

5-11

E1-34

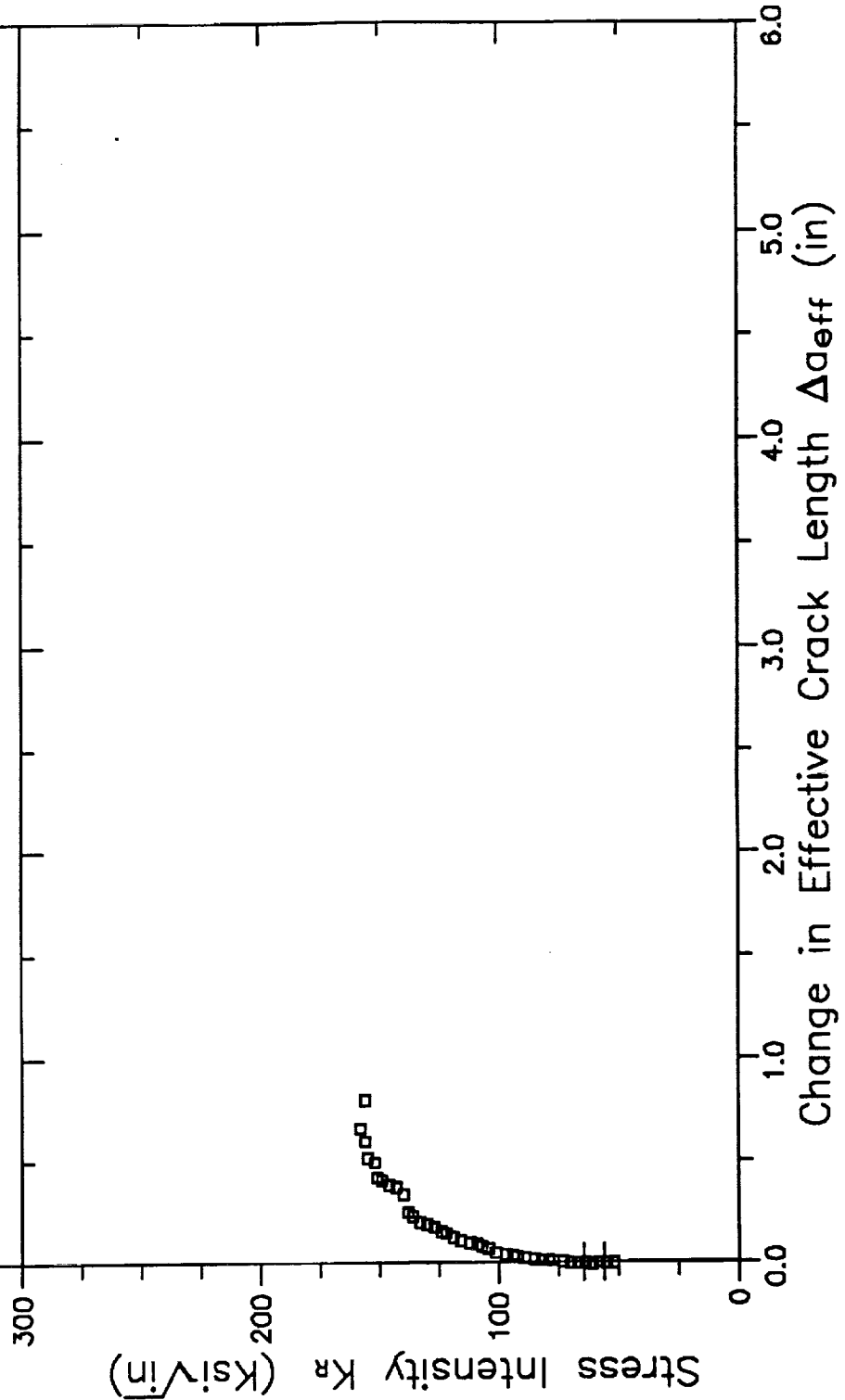
# RESISTANCE CURVE



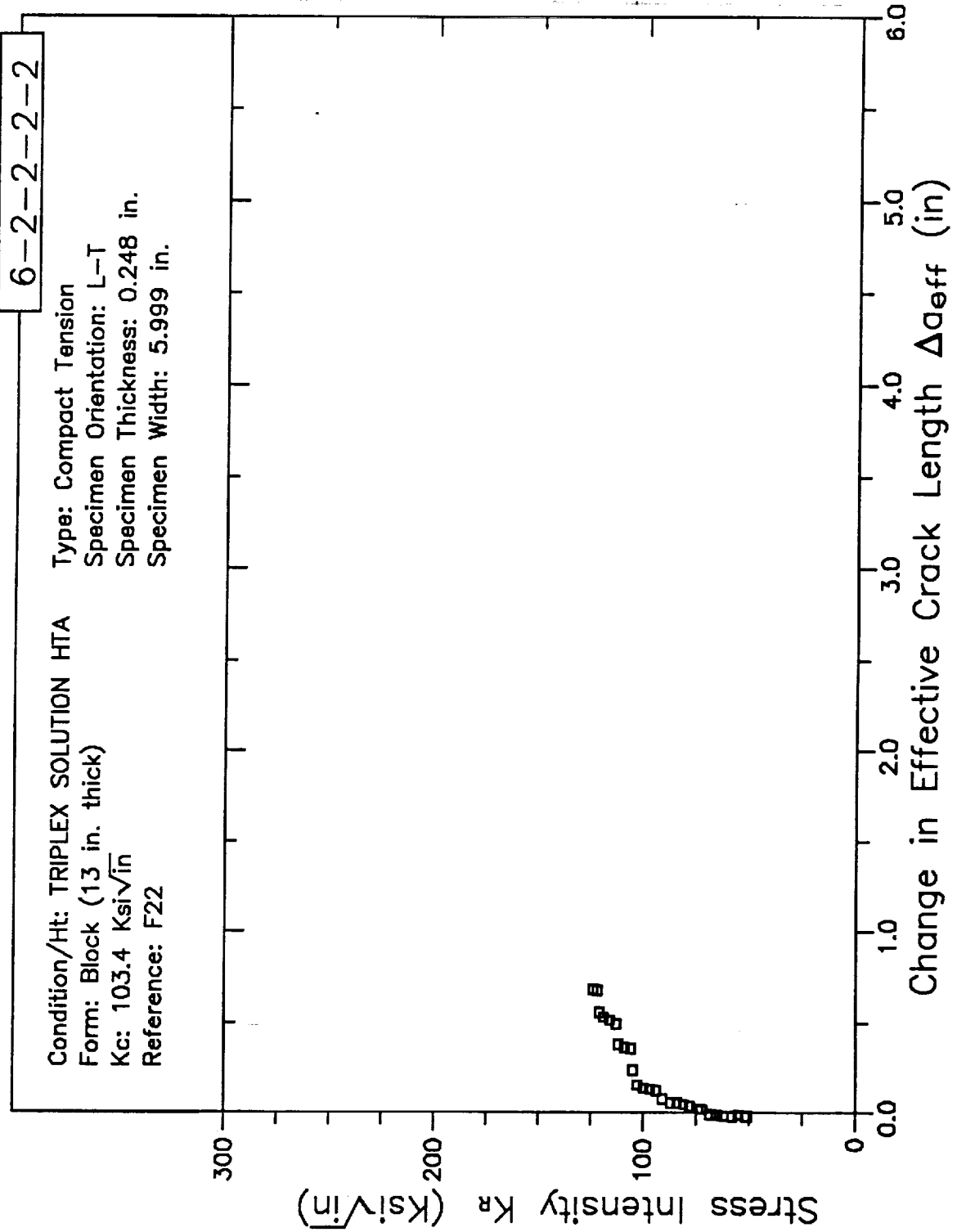
# RESISTANCE CURVE

6-2-2-2-2

Condition/Ht: TRIPLEX SOLUTION HTA    Type: Compact Tension  
Form: Plate (6 in. thick)    Specimen Orientation: L-T  
Kc: NA    Specimen Thickness: 0.248 in.  
Reference: F22    Specimen Width: 5 in.



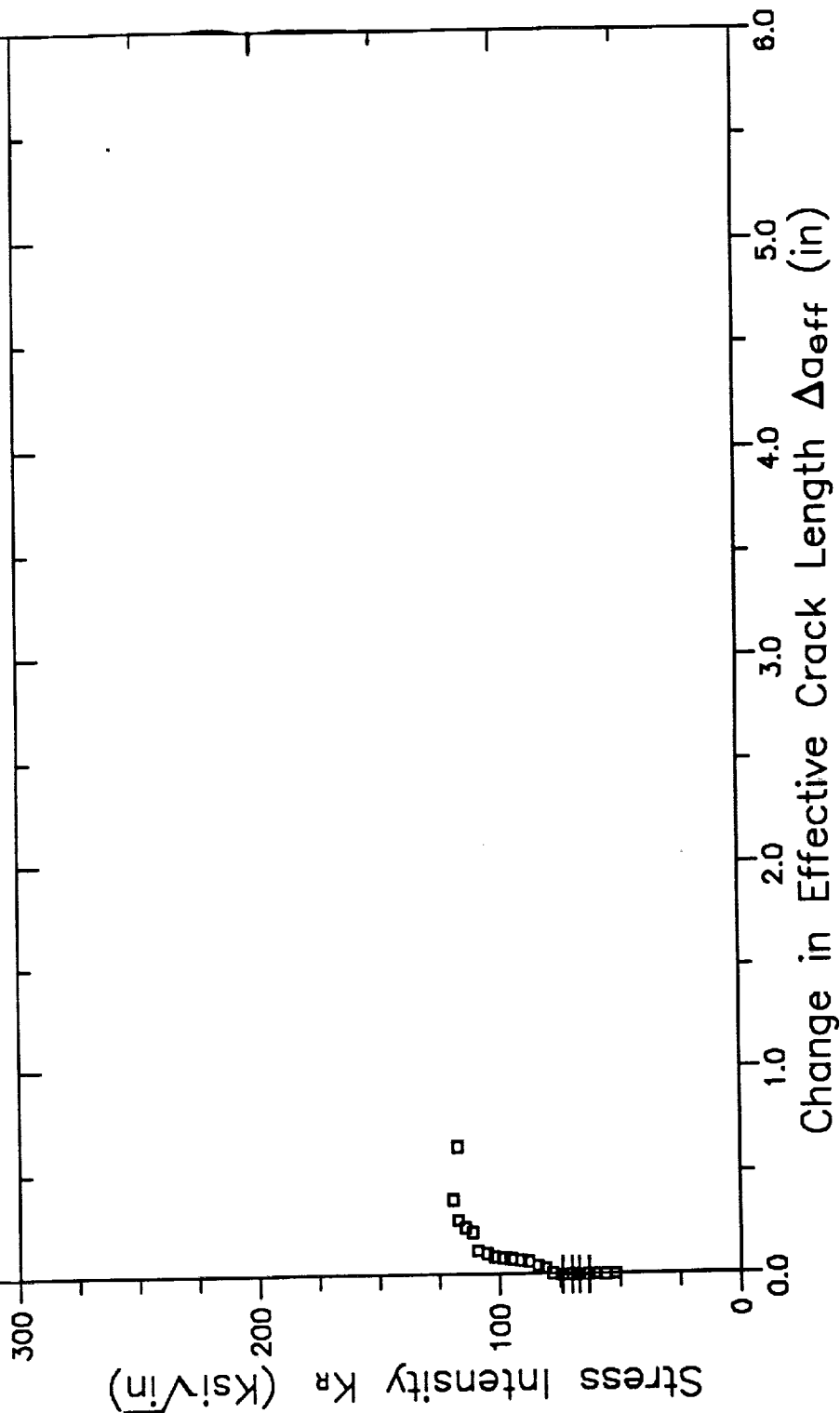
# RESISTANCE CURVE



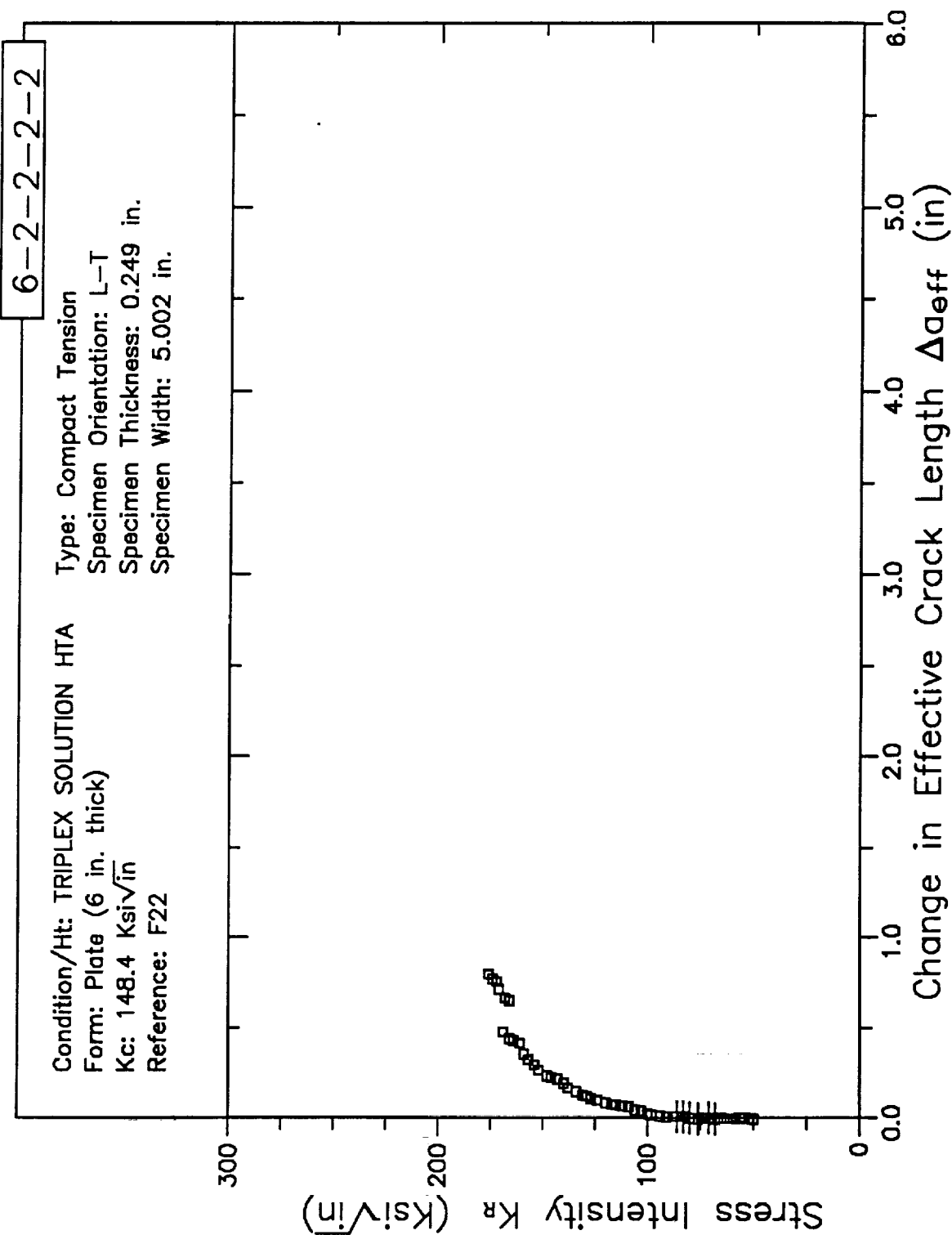
# RESISTANCE CURVE

6-2-2-2-2

Condition/Ht: TRIPLEX SOLUTION HTA      Type: Compact Tension  
 Form: Block (13 in. thick)      Specimen Orientation: L-T  
 Kc: 117.09 Ksi√in      Specimen Thickness: 0.248 in.  
 Reference: F22      Specimen Width: 6.003 in.



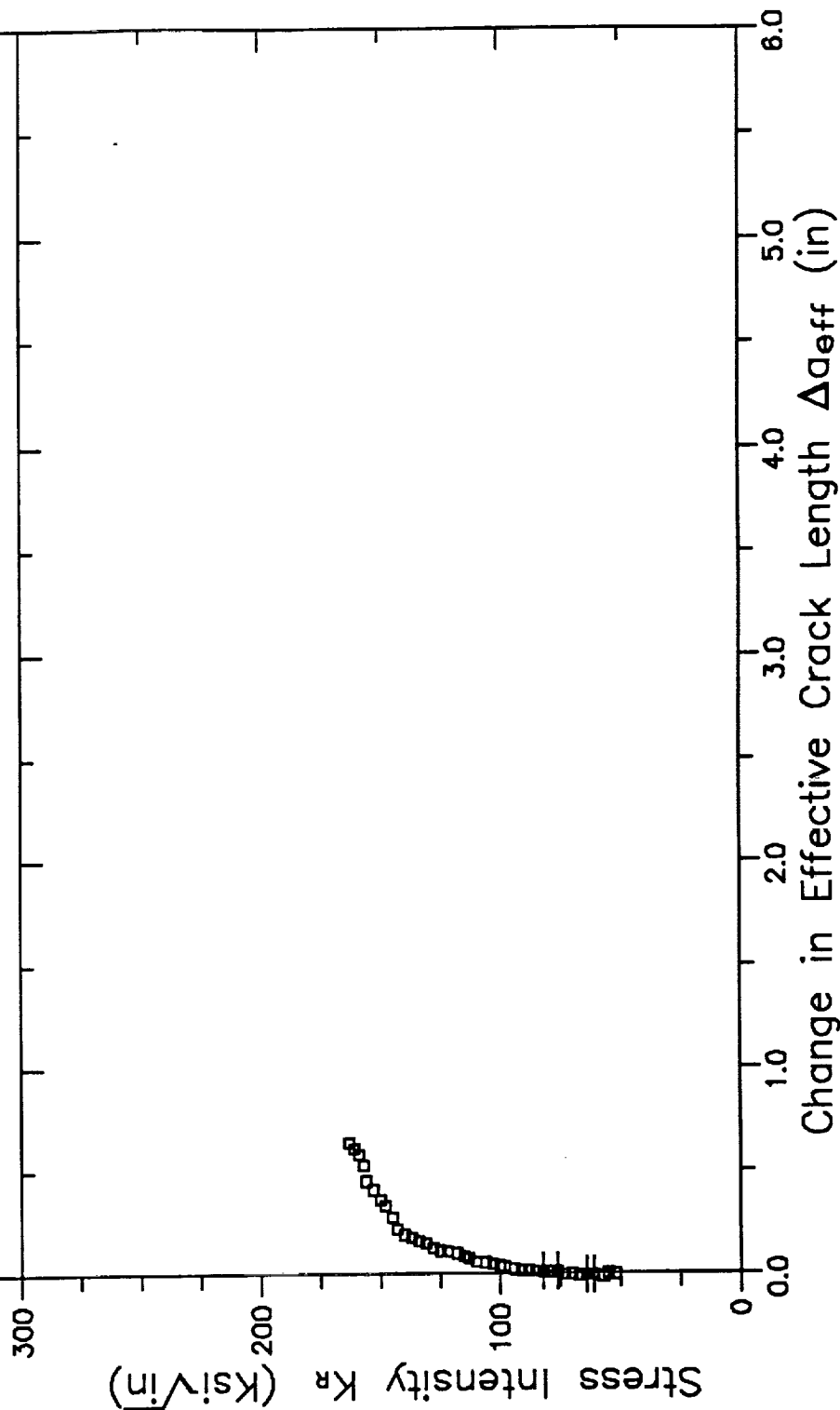
# RESISTANCE CURVE



# RESISTANCE CURVE

6-2-2-2-2

Condition/Ht: TRIPLEX SOLUTION HTA      Type: Compact Tension  
 Form: Plate (6 in. thick)      Specimen Orientation: L-T  
 Kc: 143.25 Ksi√in      Specimen Thickness: 0.249 in.  
 Reference: F22      Specimen Width: 5.002 in.

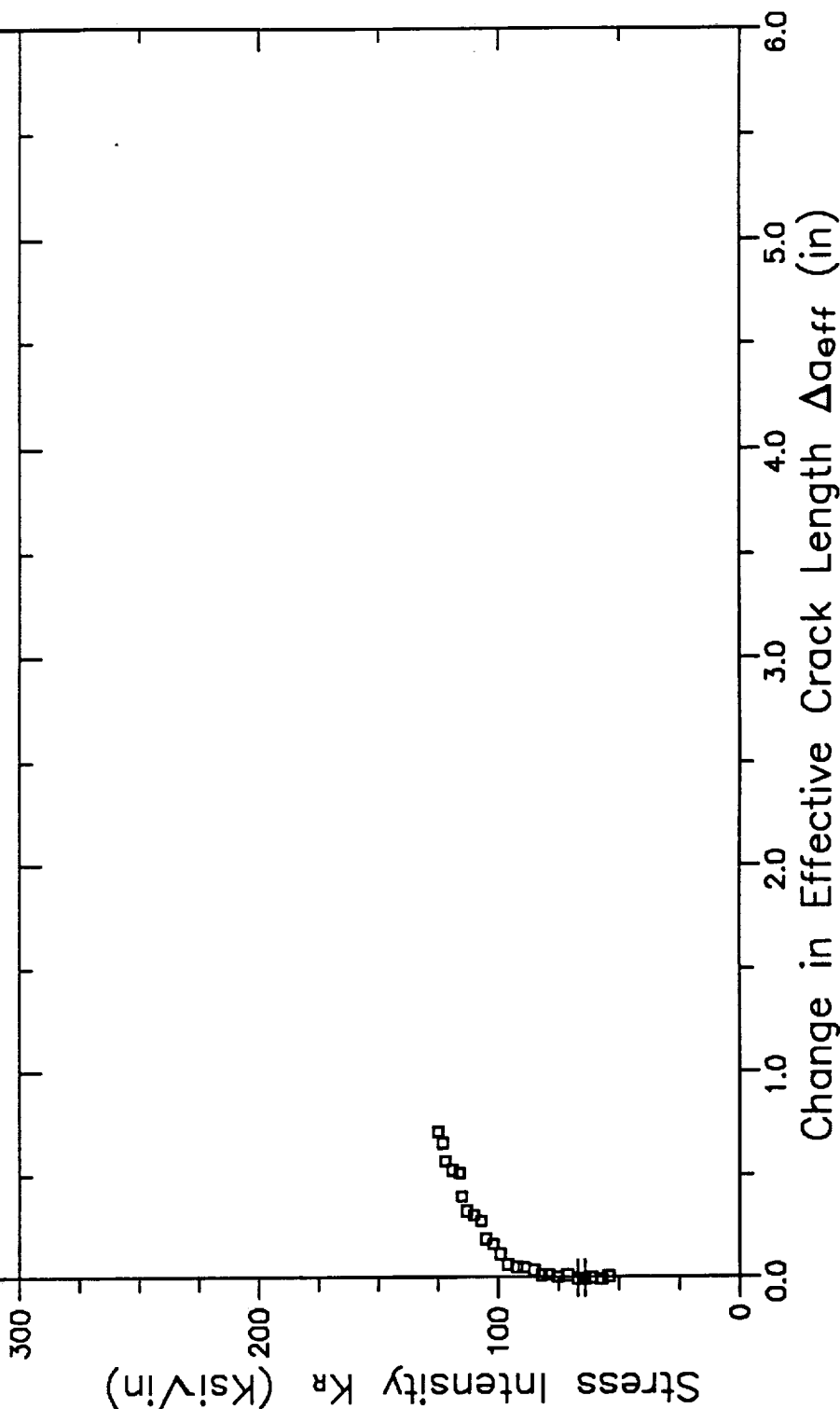




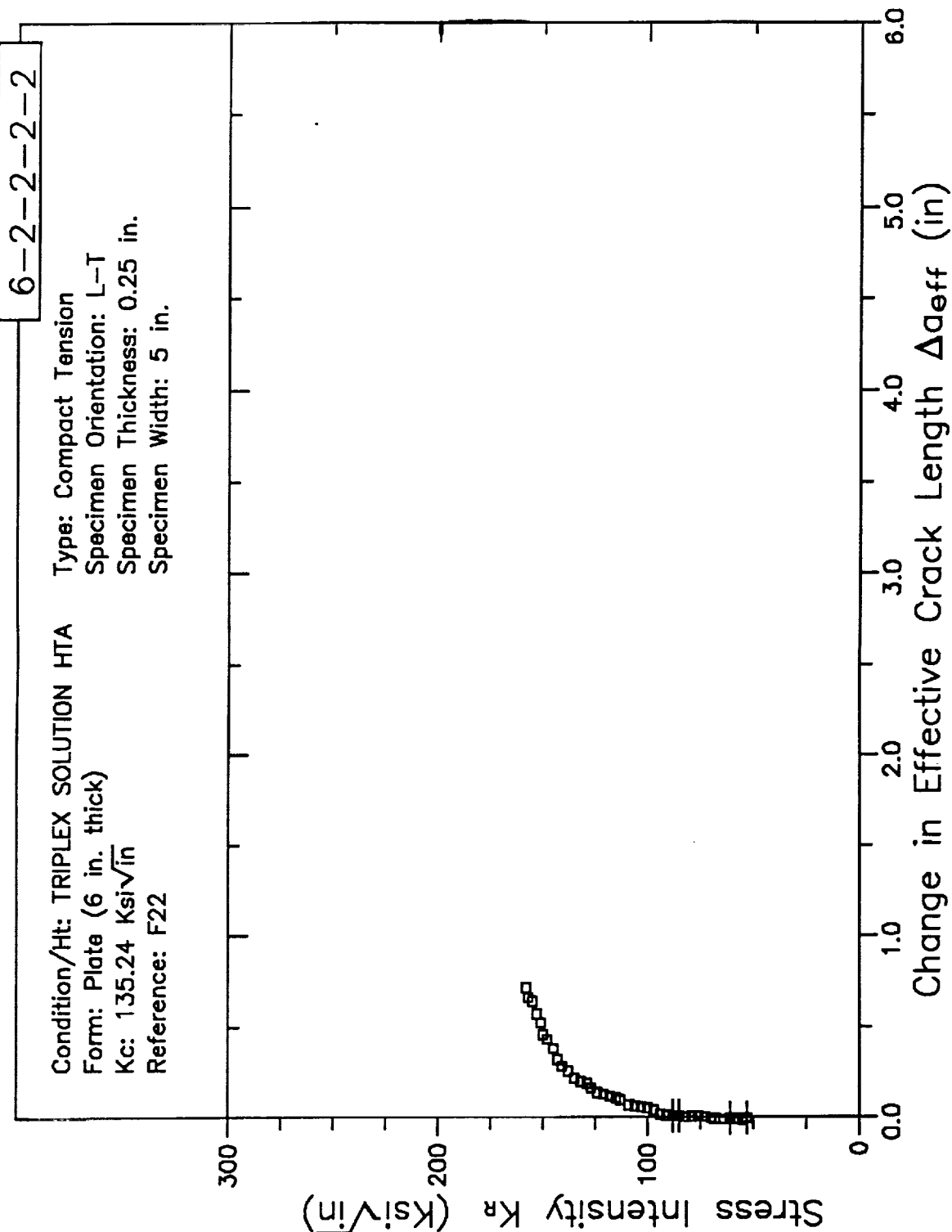
# RESISTANCE CURVE

6-2-2-2-2

Condition/Ht: TRIPLEX SOLUTION HTA      Type: Compact Tension  
 Form: Block (13 in. thick)      Specimen Orientation: L-T  
 Kc: 105.07 Ksi√in      Specimen Thickness: 0.249 in.  
 Reference: F22      Specimen Width: 5.999 in.



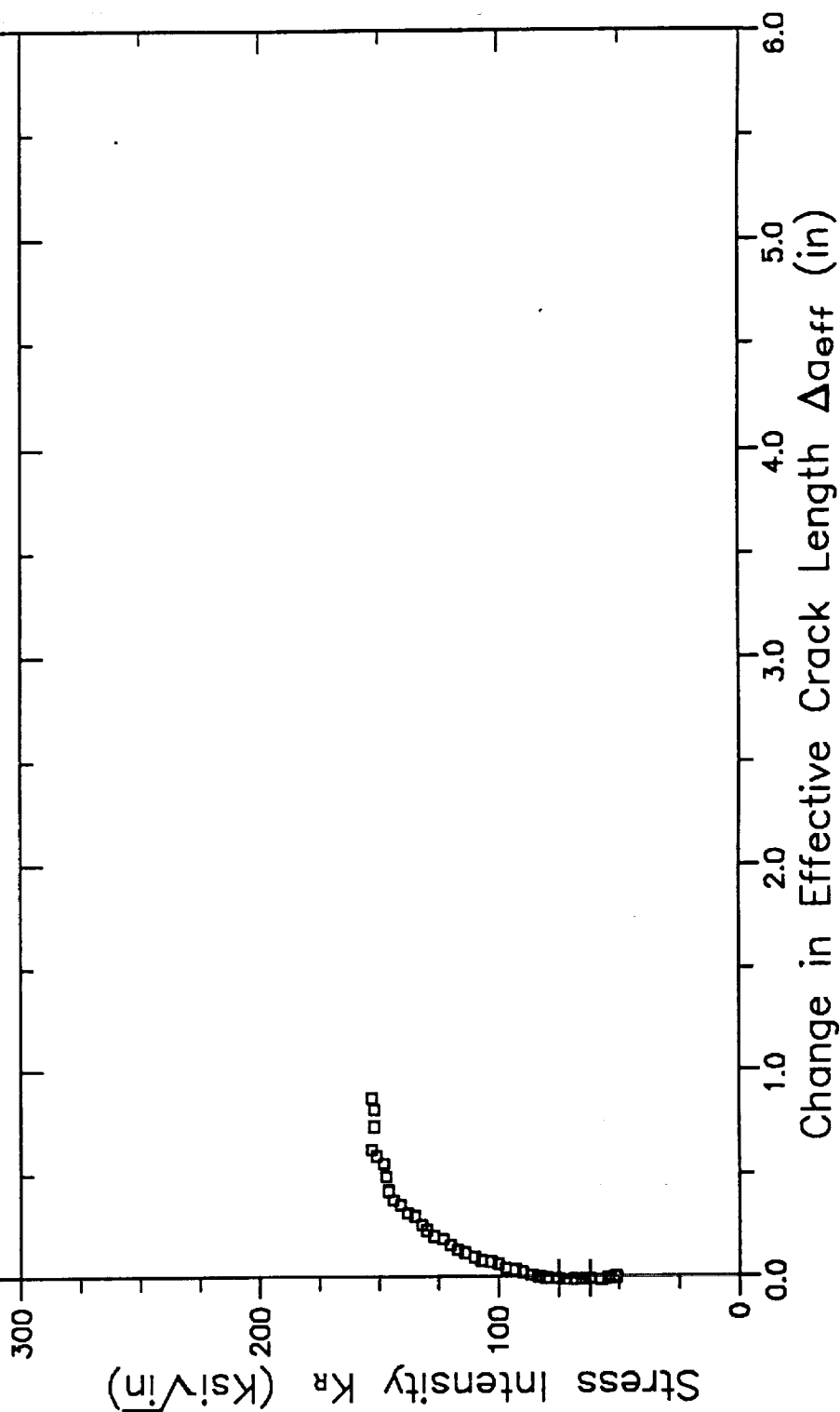
# RESISTANCE CURVE



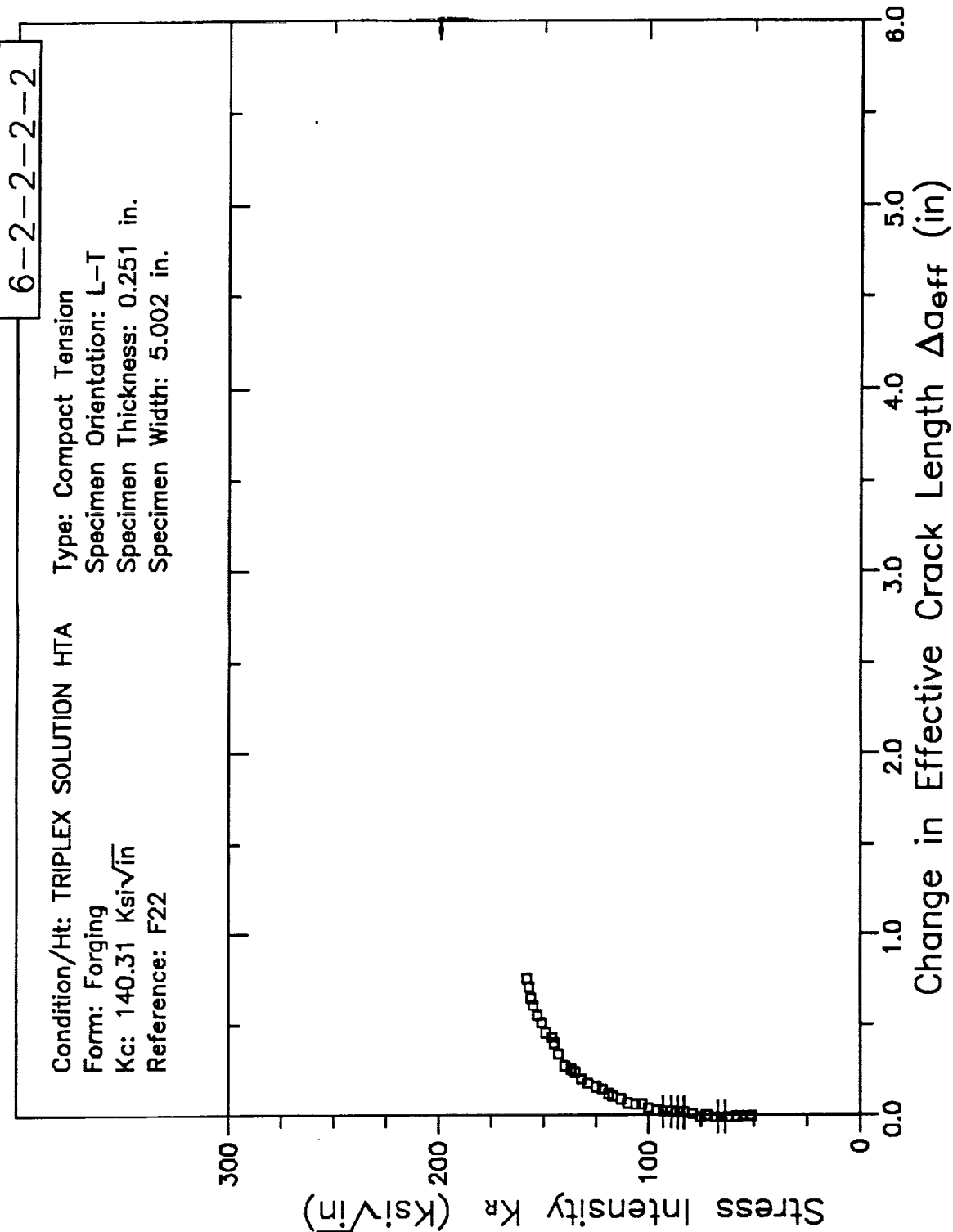
# RESISTANCE CURVE

6-2-2-2-2

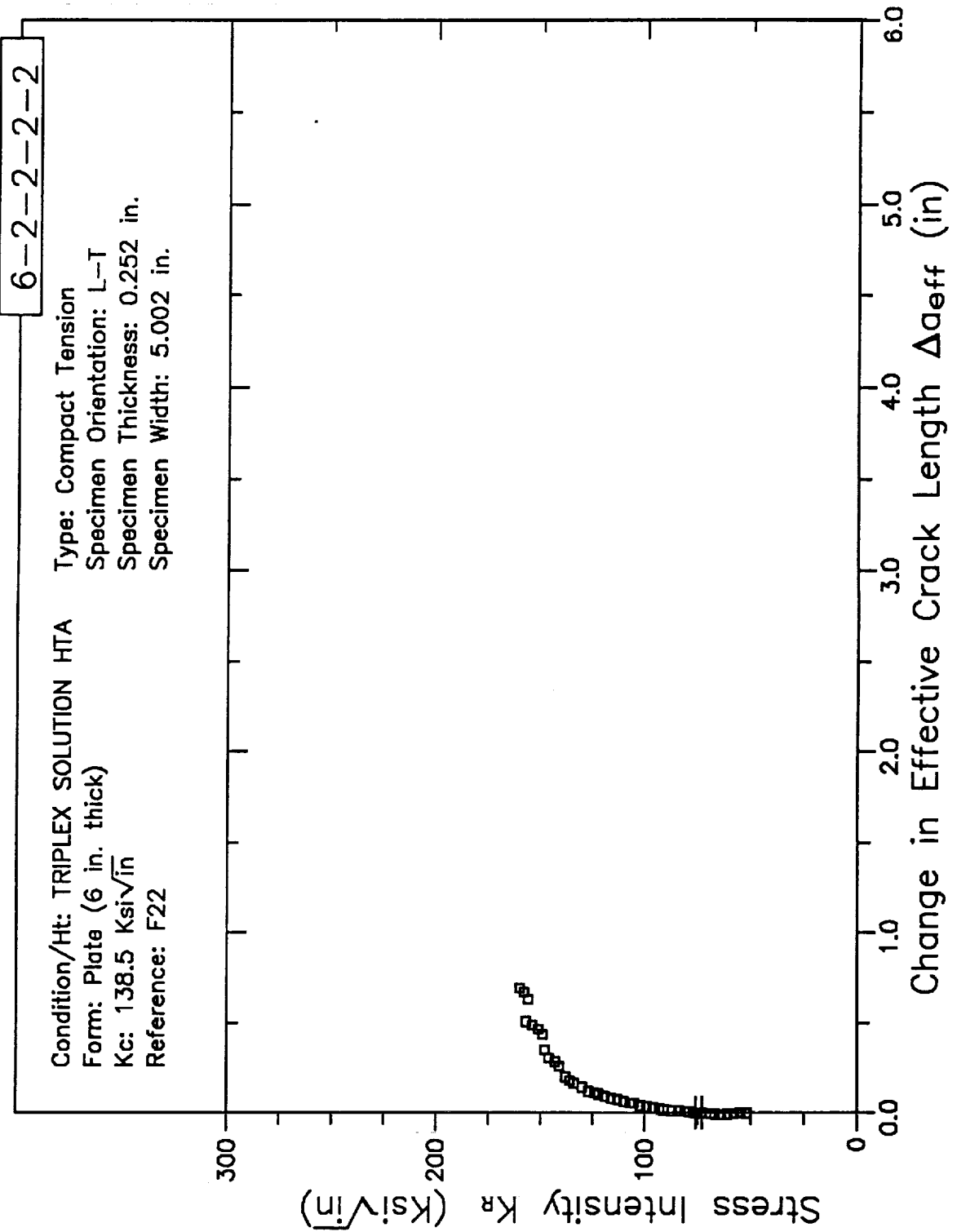
Condition/Ht: TRIPLEX SOLUTION HTA  
Form: Forging  
Kc: 138.18 Ksi $\sqrt{\text{in}}$   
Reference: F22  
Type: Compact Tension  
Specimen Orientation: L-T  
Specimen Thickness: 0.251 in.  
Specimen Width: 4 in.



# RESISTANCE CURVE



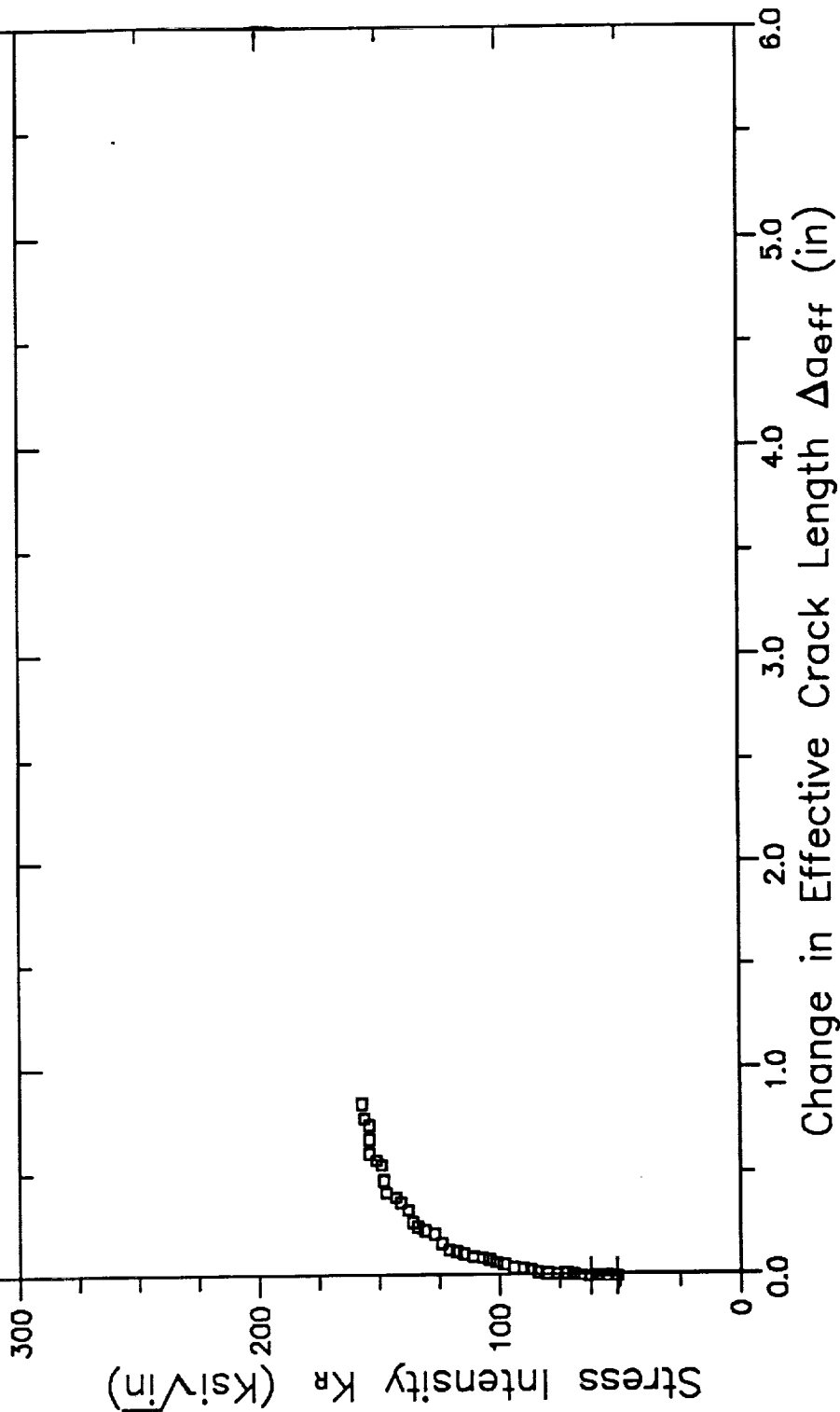
# RESISTANCE CURVE



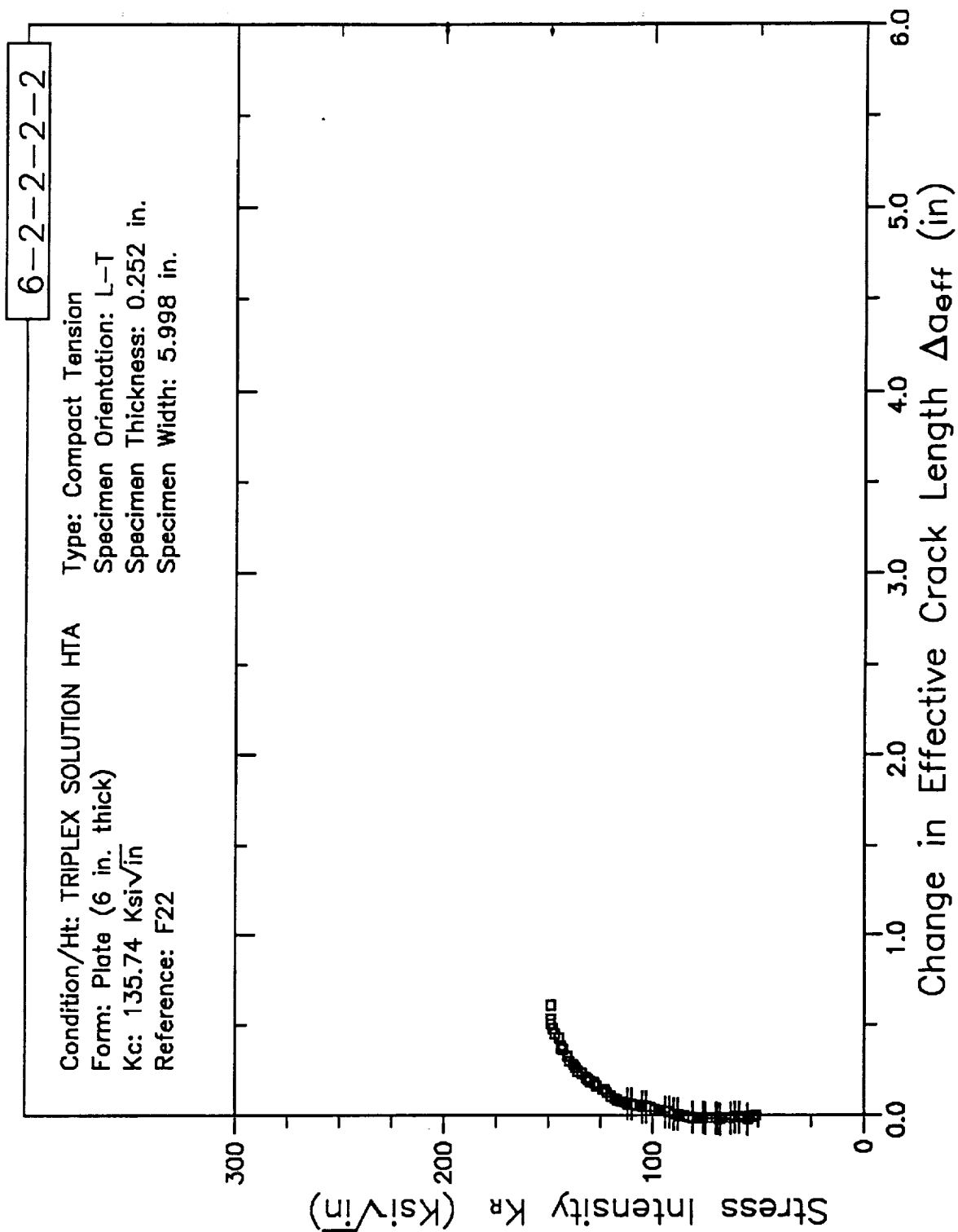
# RESISTANCE CURVE

6-2-2-2-2

Condition/Ht: TRIPLEX SOLUTION HTA  
 Form: Forging  
 Kc: 136.31 Ksi√in  
 Reference: F22  
 Type: Compact Tension  
 Specimen Orientation: L-T  
 Specimen Thickness: 0.252 in.  
 Specimen Width: 5.002 in.



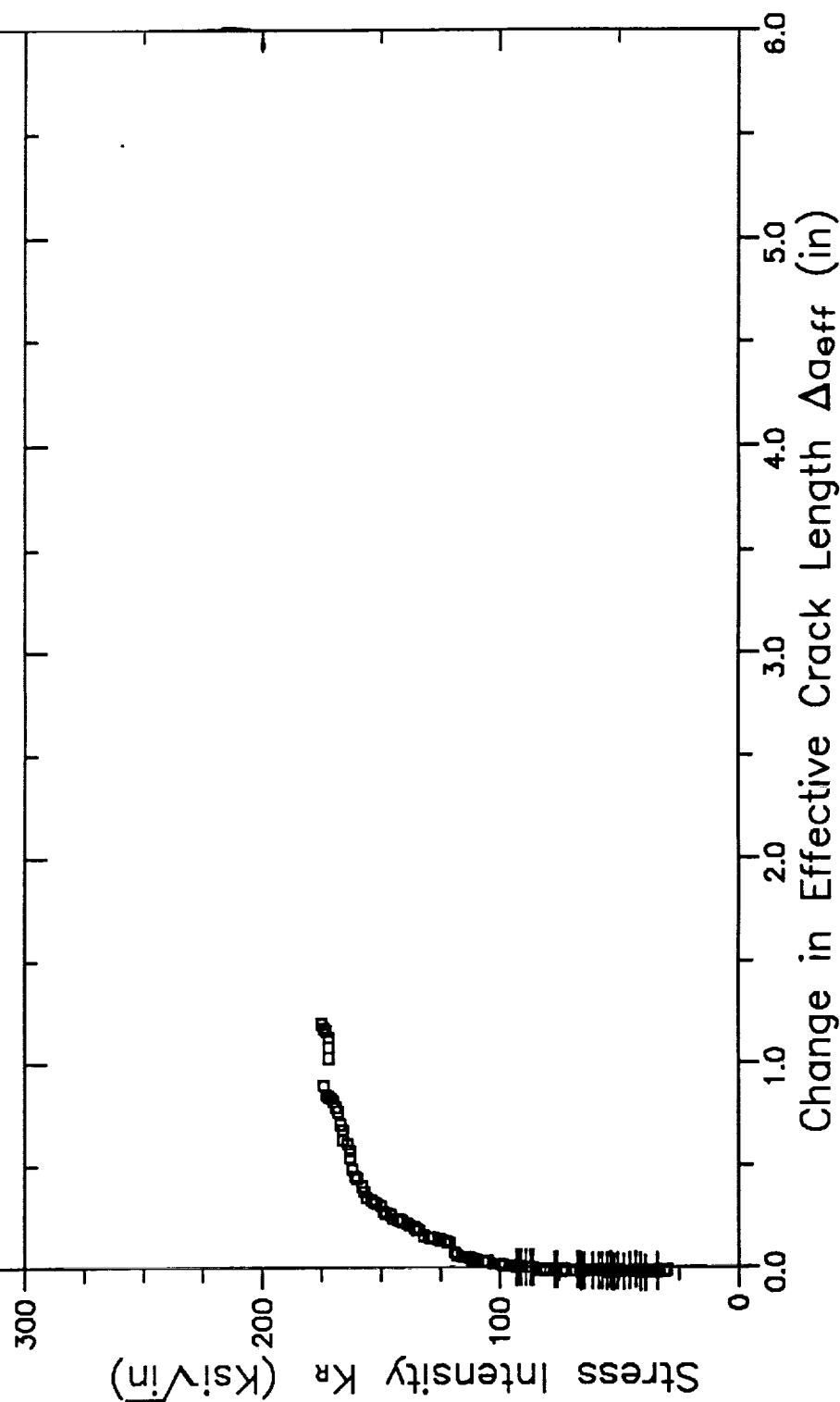
# RESISTANCE CURVE



# RESISTANCE CURVE

6-2-2-2-2

Condition/Ht: TRIPLEX SOLUTION HTA      Type: Compact Tension  
 Form: Plate (6 in. thick)      Specimen Orientation: L-T  
 Kc: 155.51 Ksi√in      Specimen Thickness: 0.498 in.  
 Reference: F22      Specimen Width: 5.002 in.

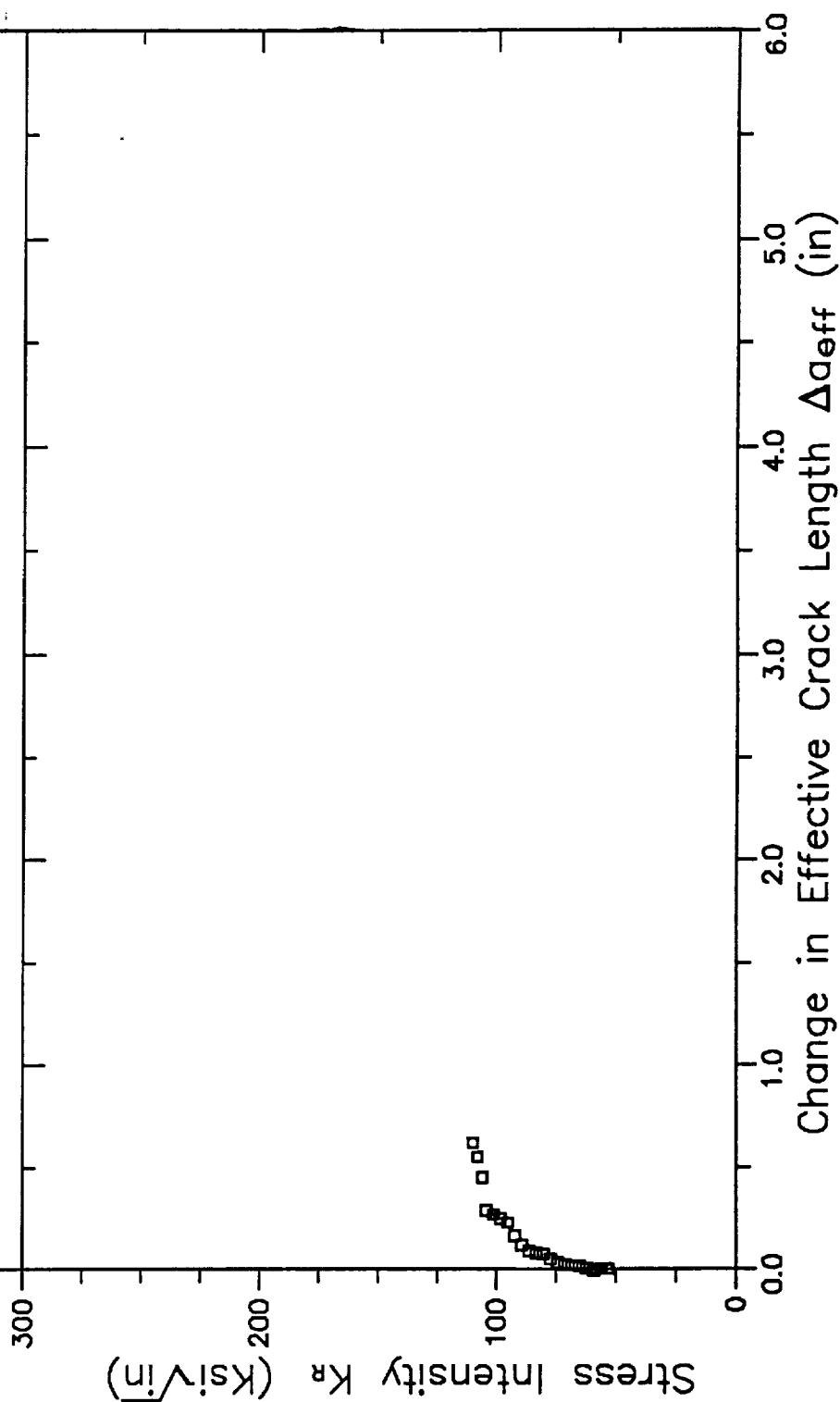




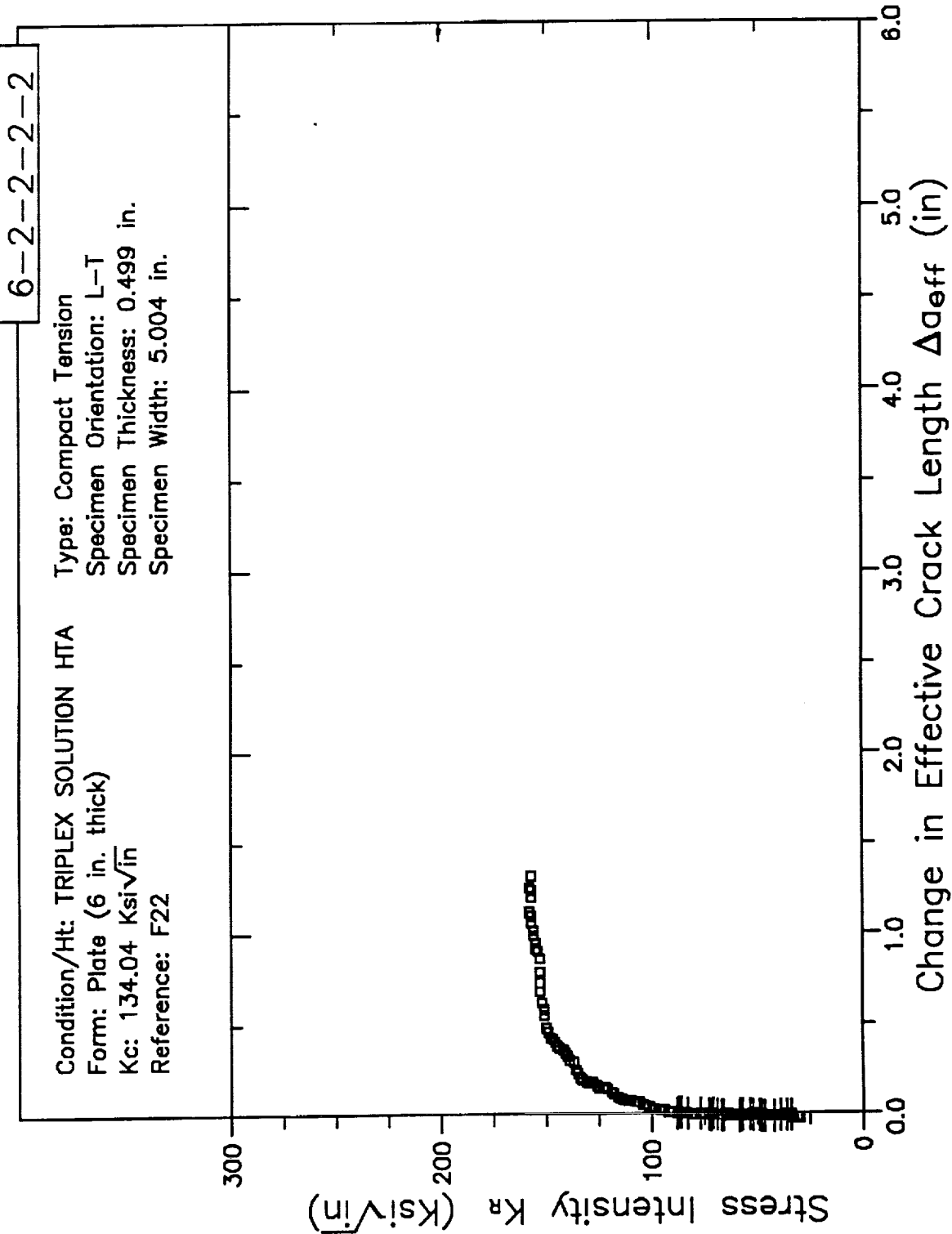
# RESISTANCE CURVE

6-2-2-2-2

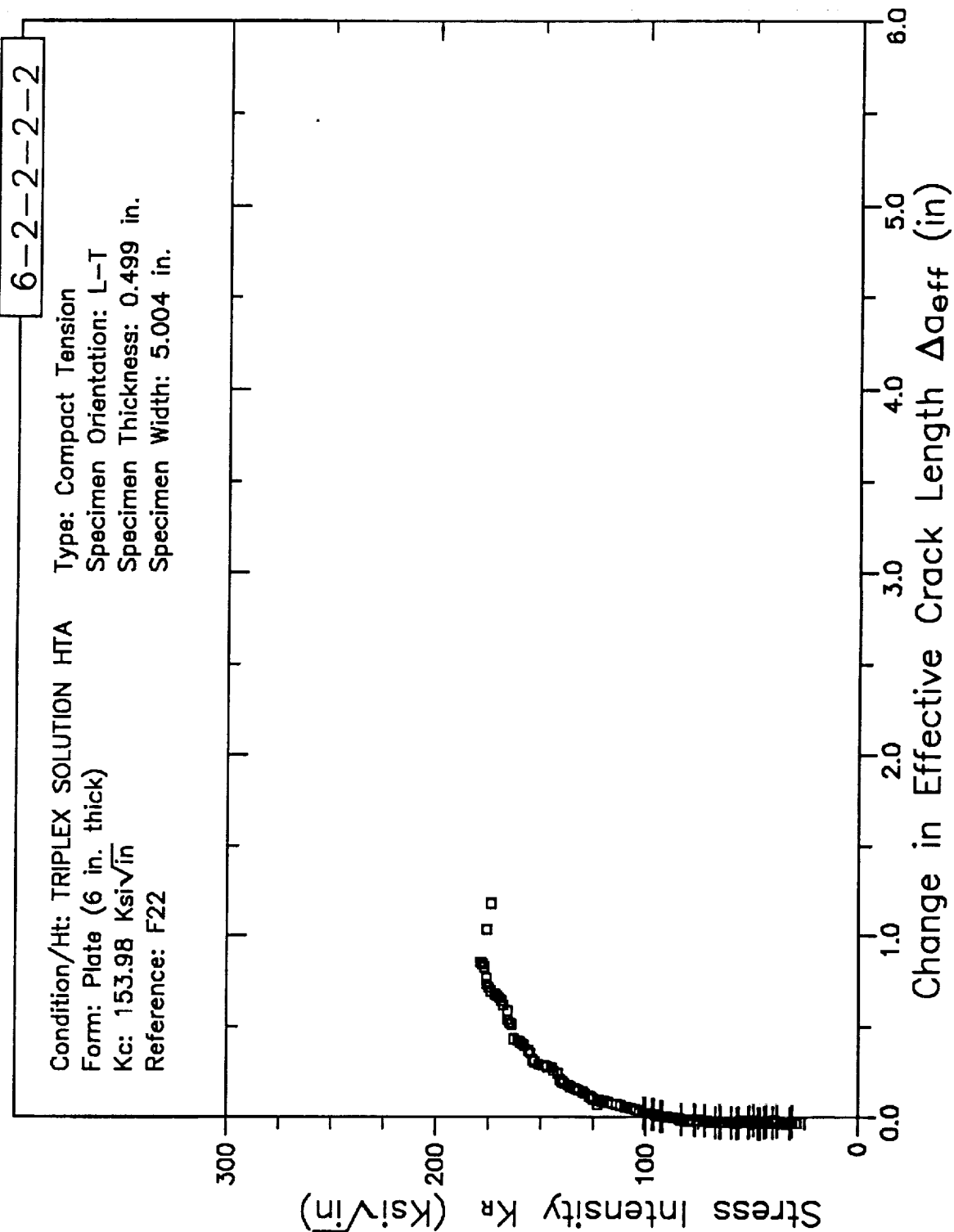
Condition/Ht: TRIPLEX SOLUTION HTA  
Form: Block (13 in. thick)  
Kc: 103.52 Ksi $\sqrt{\text{in}}$   
Reference: F22  
Type: Compact Tension  
Specimen Orientation: L-T  
Specimen Thickness: 0.498 in.  
Specimen Width: 6.002 in.



# RESISTANCE CURVE



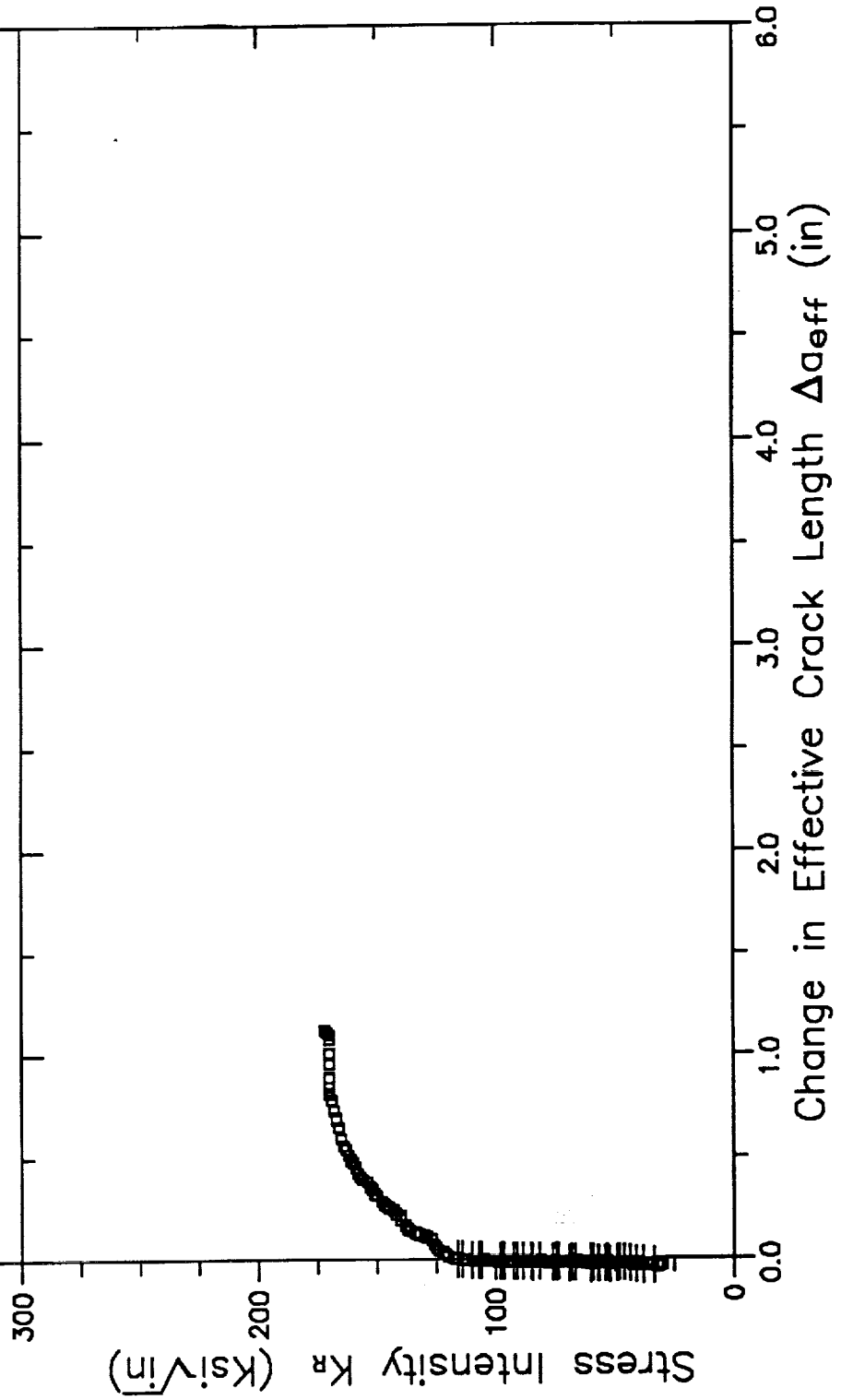
# RESISTANCE CURVE



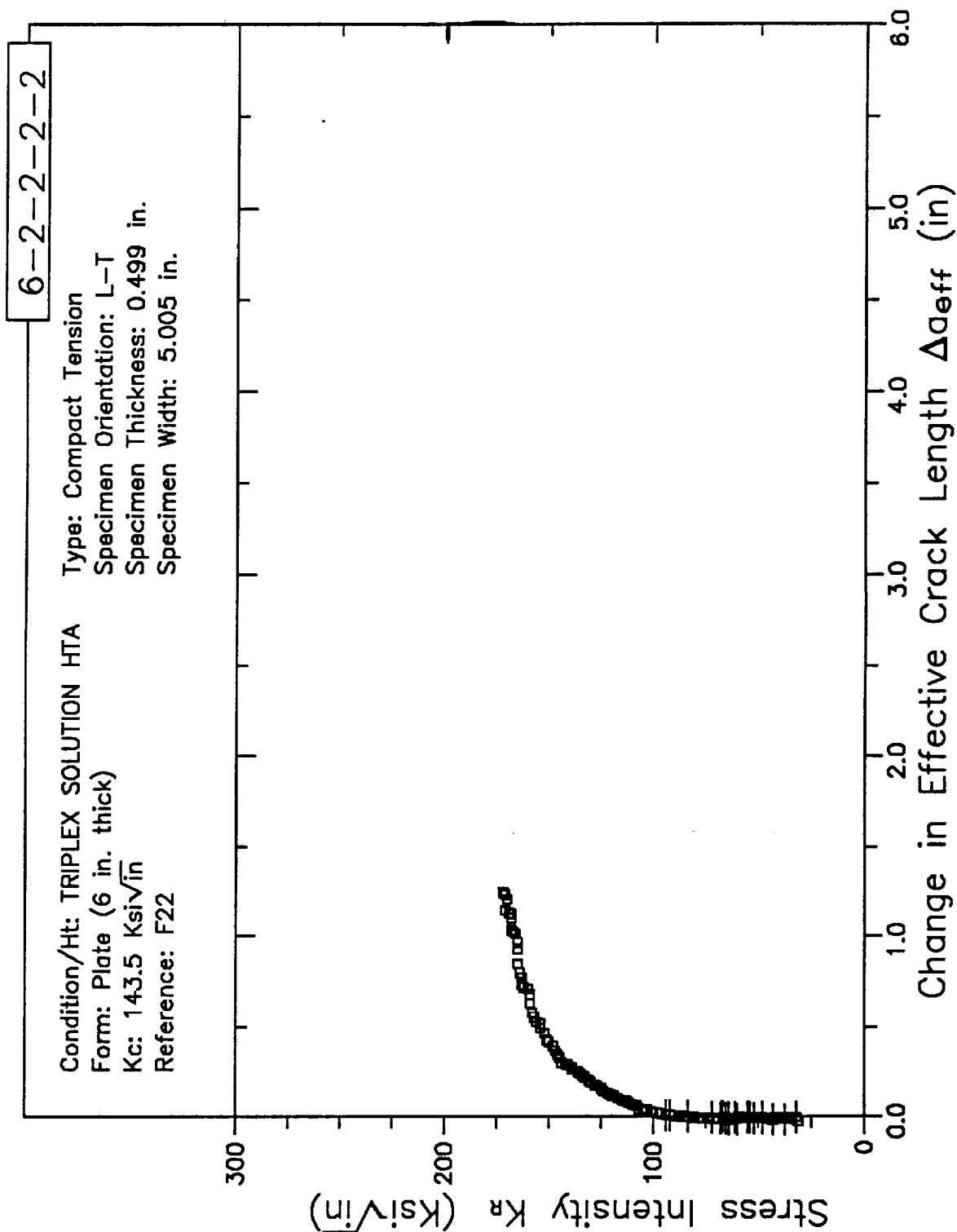
# RESISTANCE CURVE

6-2-2-2-2

Condition/Ht: TRIPLEX SOLUTION HTA    Type: Compact Tension  
Form: Plate (6 in. thick)    Specimen Orientation: L-T  
Kc: 148.32 Ksi $\sqrt{\text{in}}$     Specimen Thickness: 0.499 in.  
Reference: F22    Specimen Width: 5.005 in.



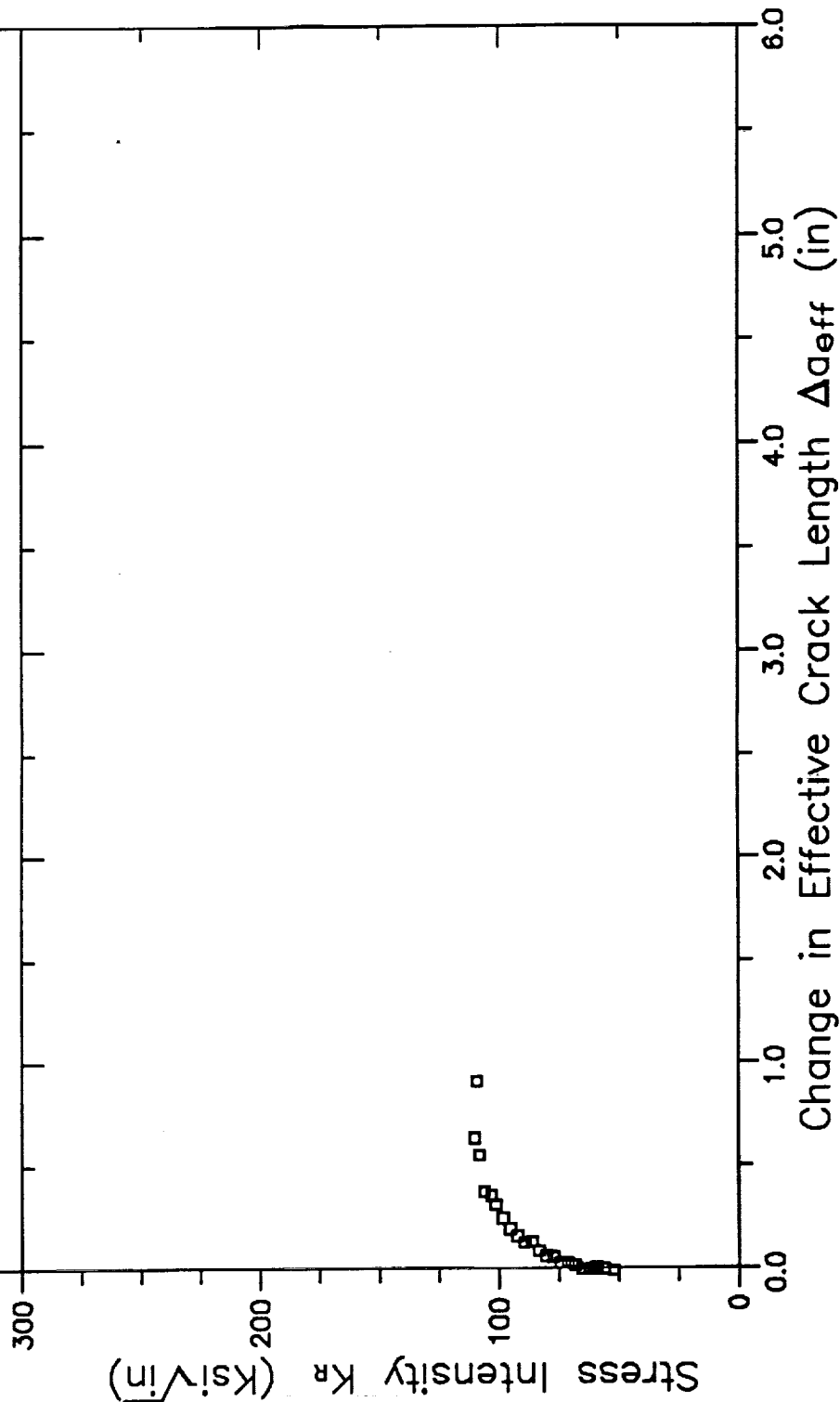
# RESISTANCE CURVE



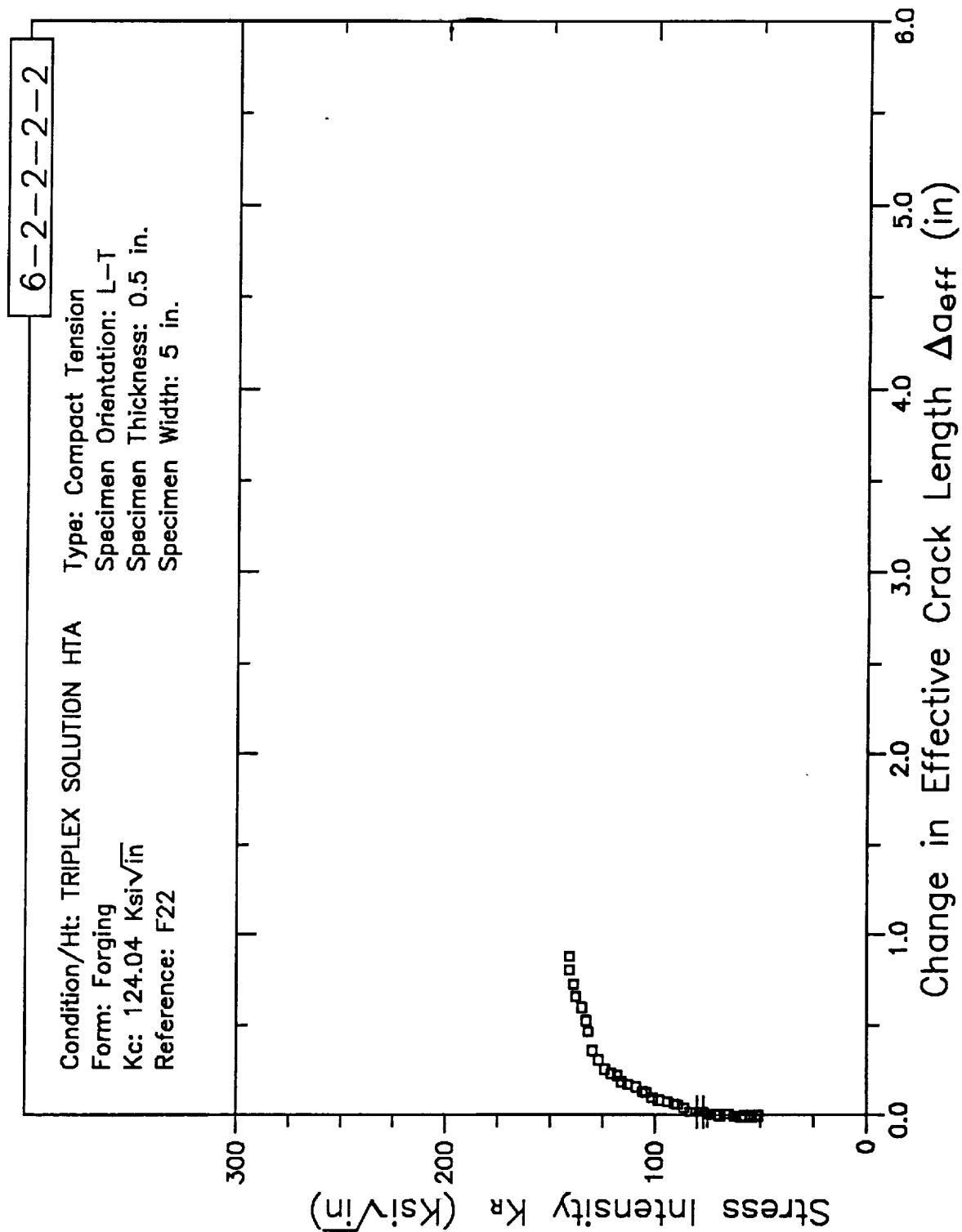
# RESISTANCE CURVE

6-2-2-2-2

Condition/Ht: TRIPLEX SOLUTION HTA      Type: Compact Tension  
 Form: Block (13 in. thick)      Specimen Orientation: L-T  
 Kc: 106.03 Ksi $\sqrt{\text{in}}$       Specimen Thickness: 0.499 in.  
 Reference: F22      Specimen Width: 6.001 in.



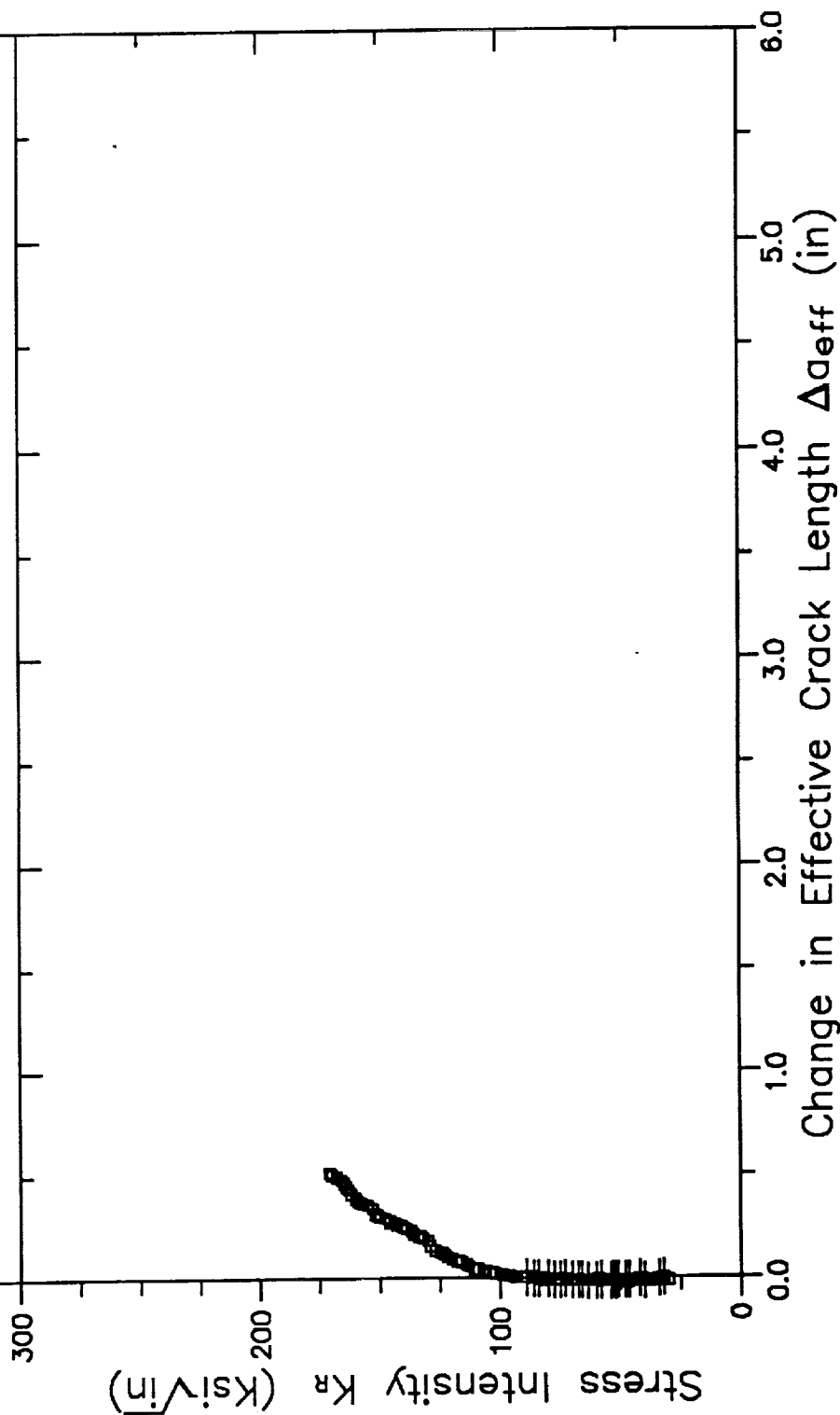
# RESISTANCE CURVE



# RESISTANCE CURVE

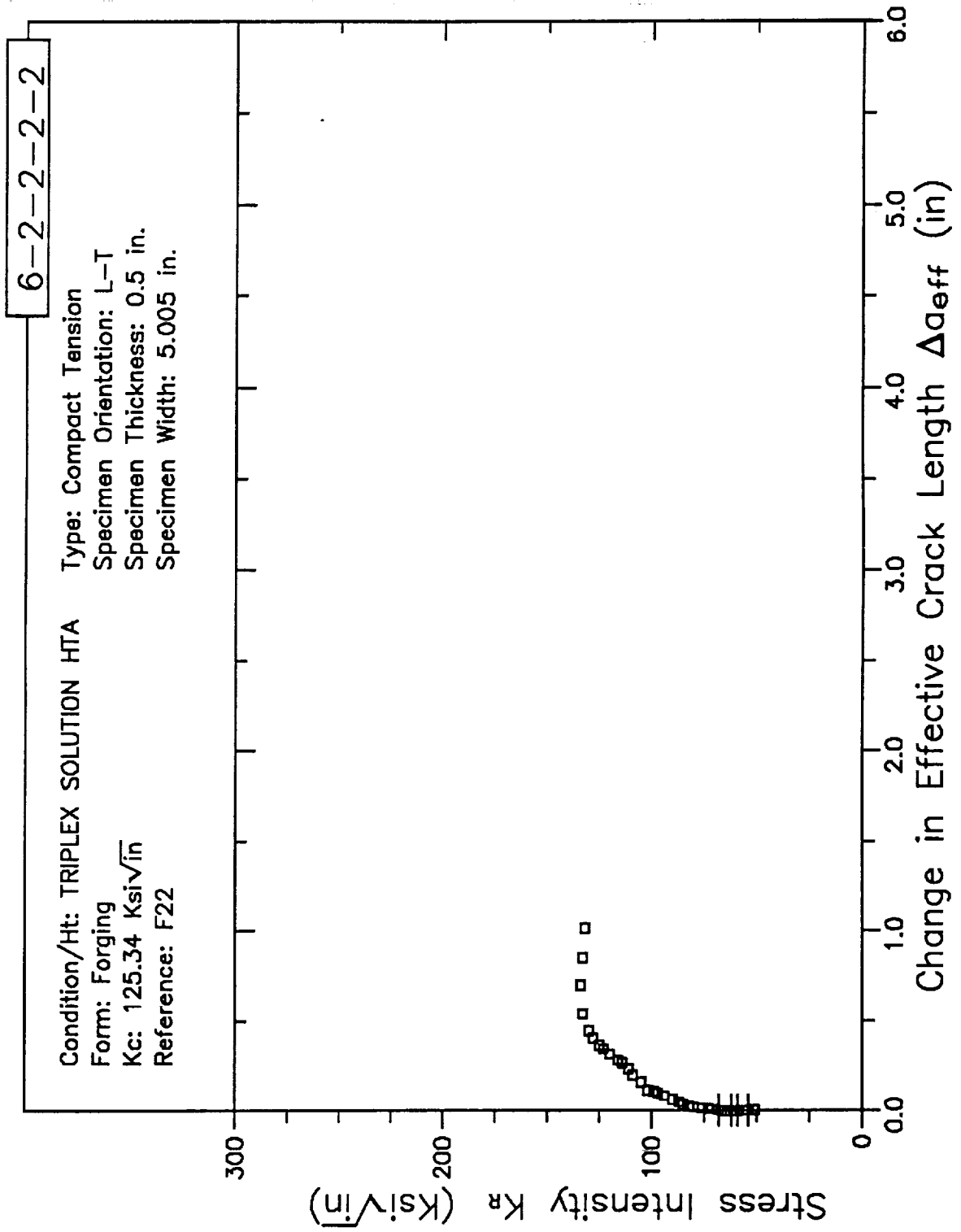
6-2-2-2-2

Condition/Ht: TRIPLEX SOLUTION HTA    Type: Compact Tension  
Form: Plate (6 in. thick)    Specimen Orientation: L-T  
Kc: 160.41 Ksi√in    Specimen Thickness: 0.5 in.  
Reference: F22    Specimen Width: 5.003 in.





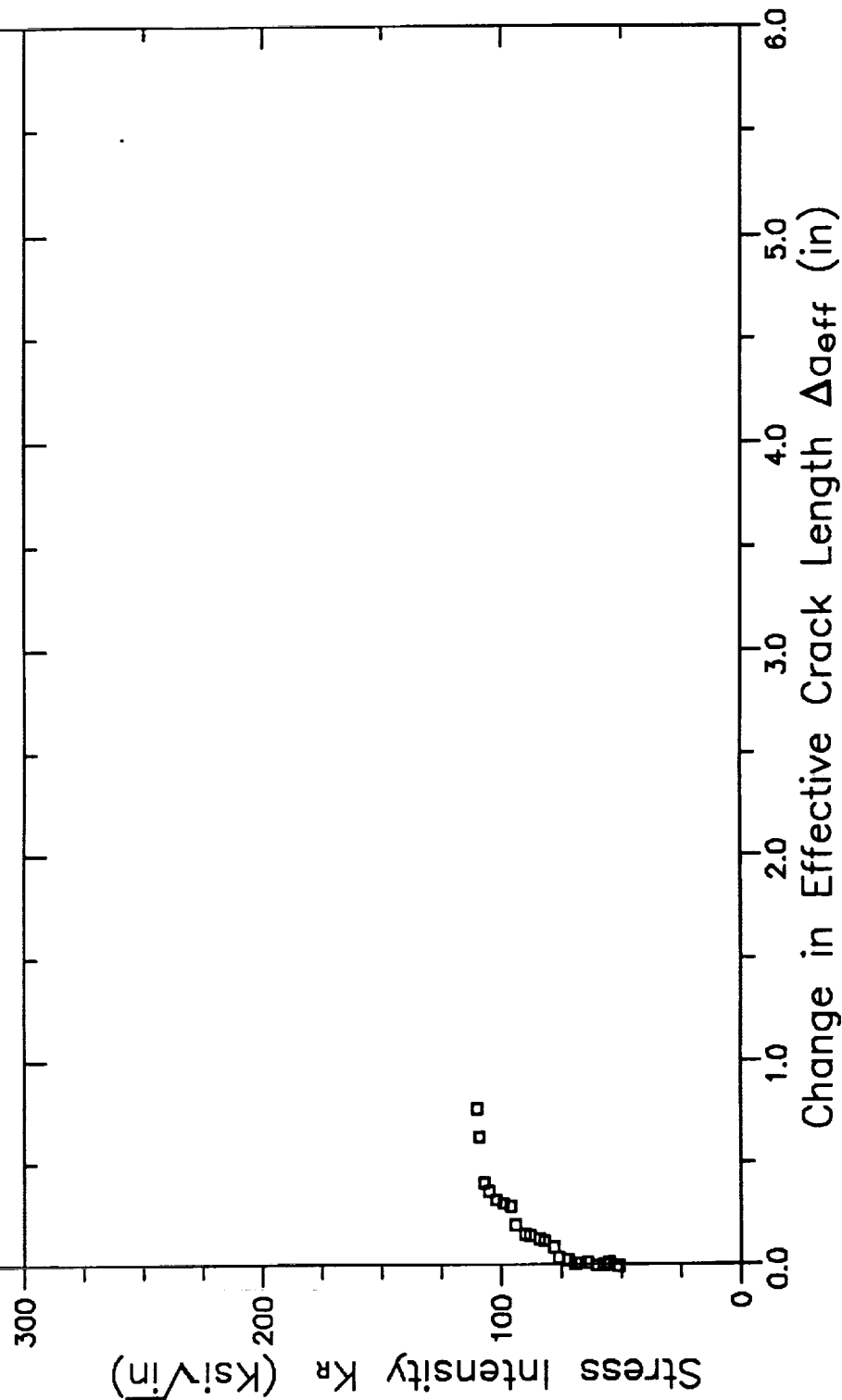
# RESISTANCE CURVE



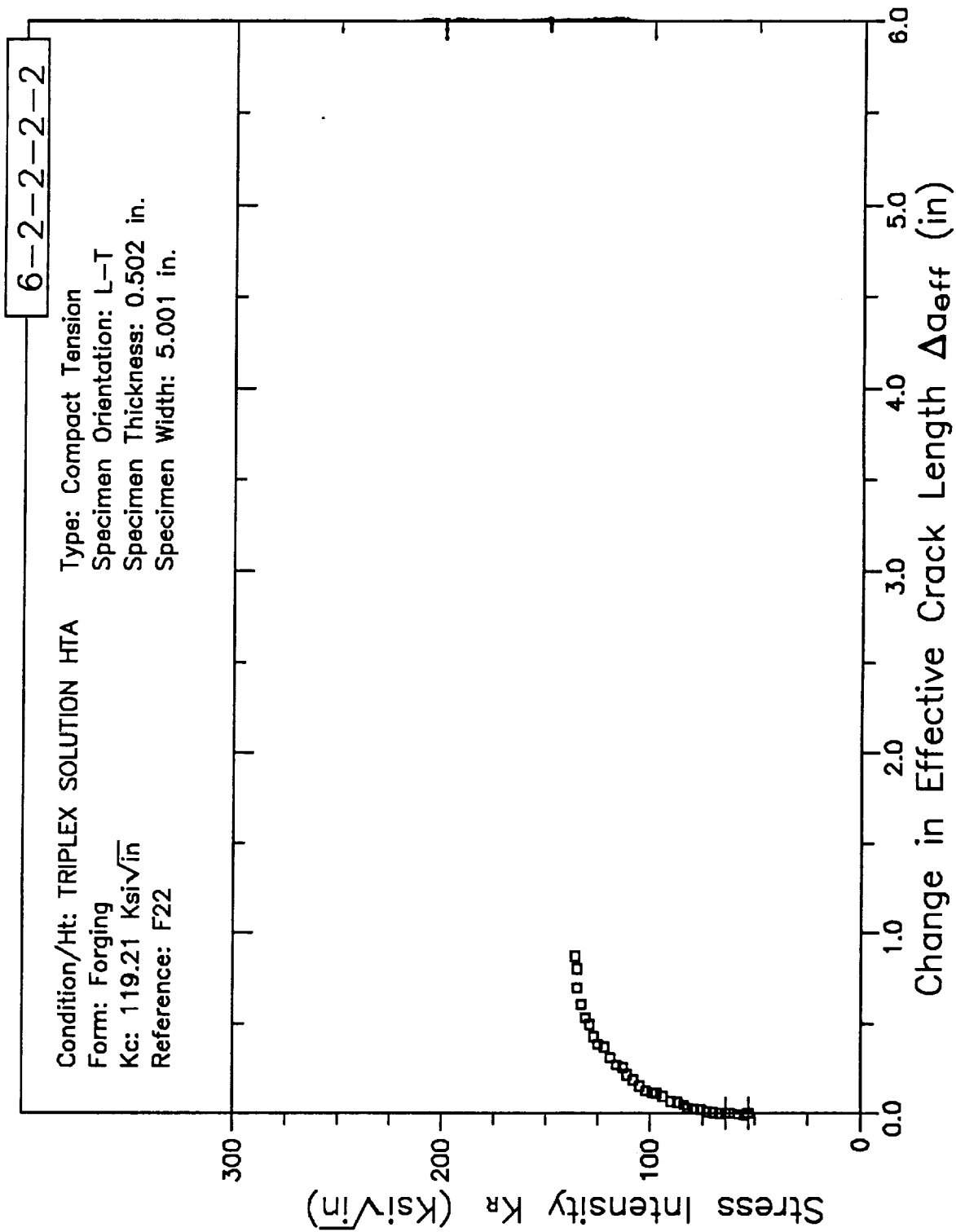
# RESISTANCE CURVE

6-2-2-2-2

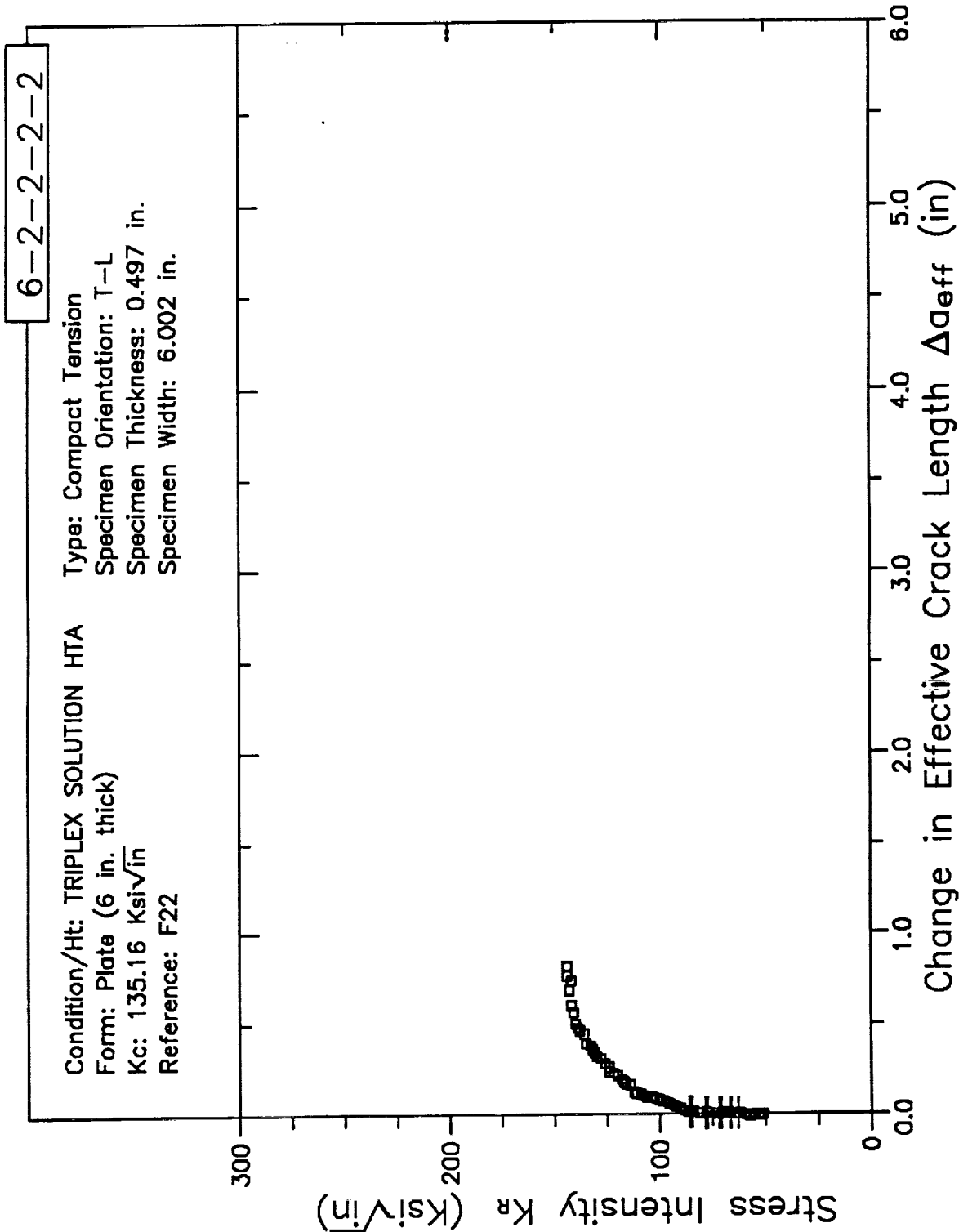
Condition/Ht: TRIPLEX SOLUTION HTA      Type: Compact Tension  
 Form: Block (13 in. thick)      Specimen Orientation: L-T  
 Kc: 107.37 Ksi√in      Specimen Thickness: 0.5 in.  
 Reference: F22      Specimen Width: 6.001 in.



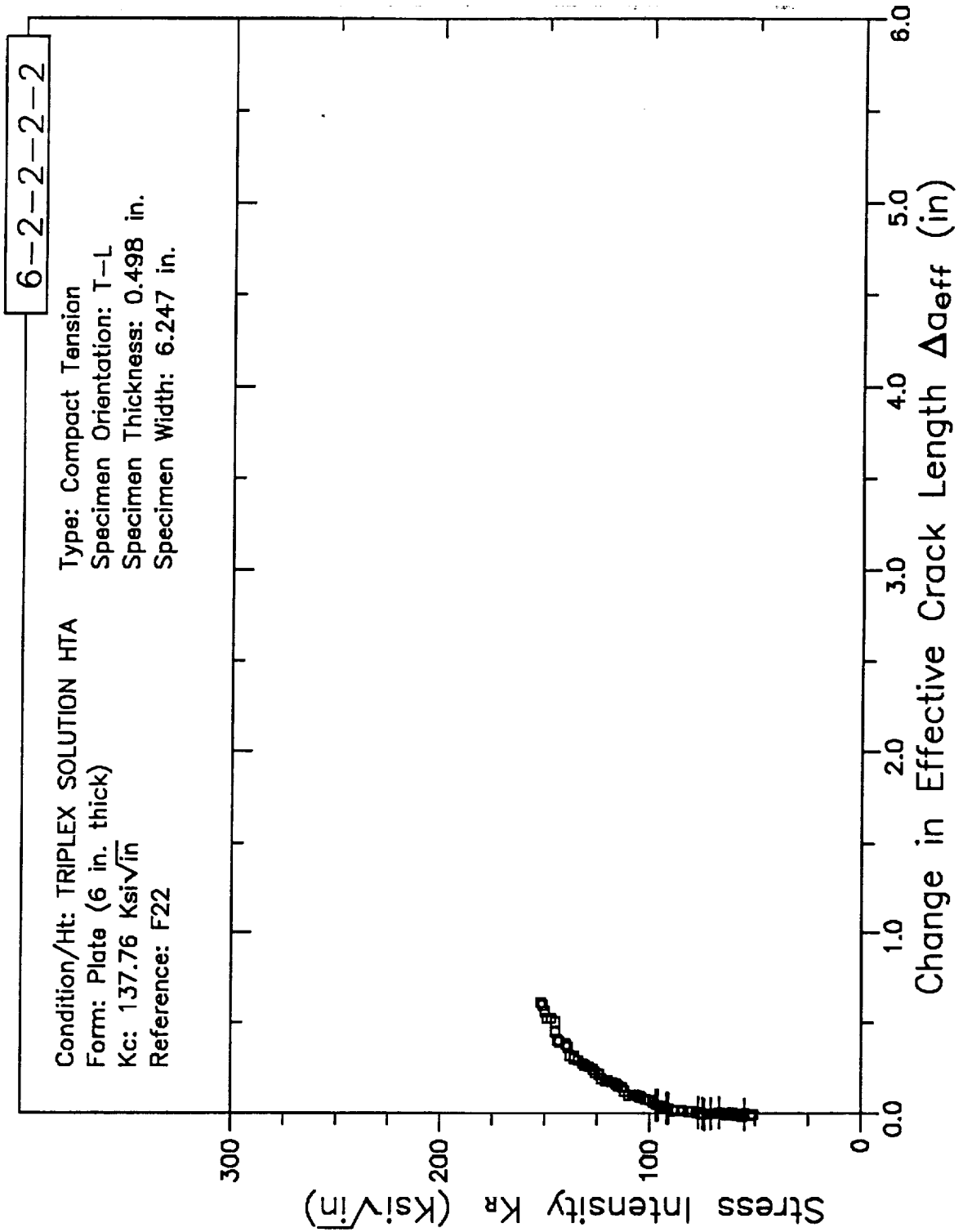
# RESISTANCE CURVE



# RESISTANCE CURVE



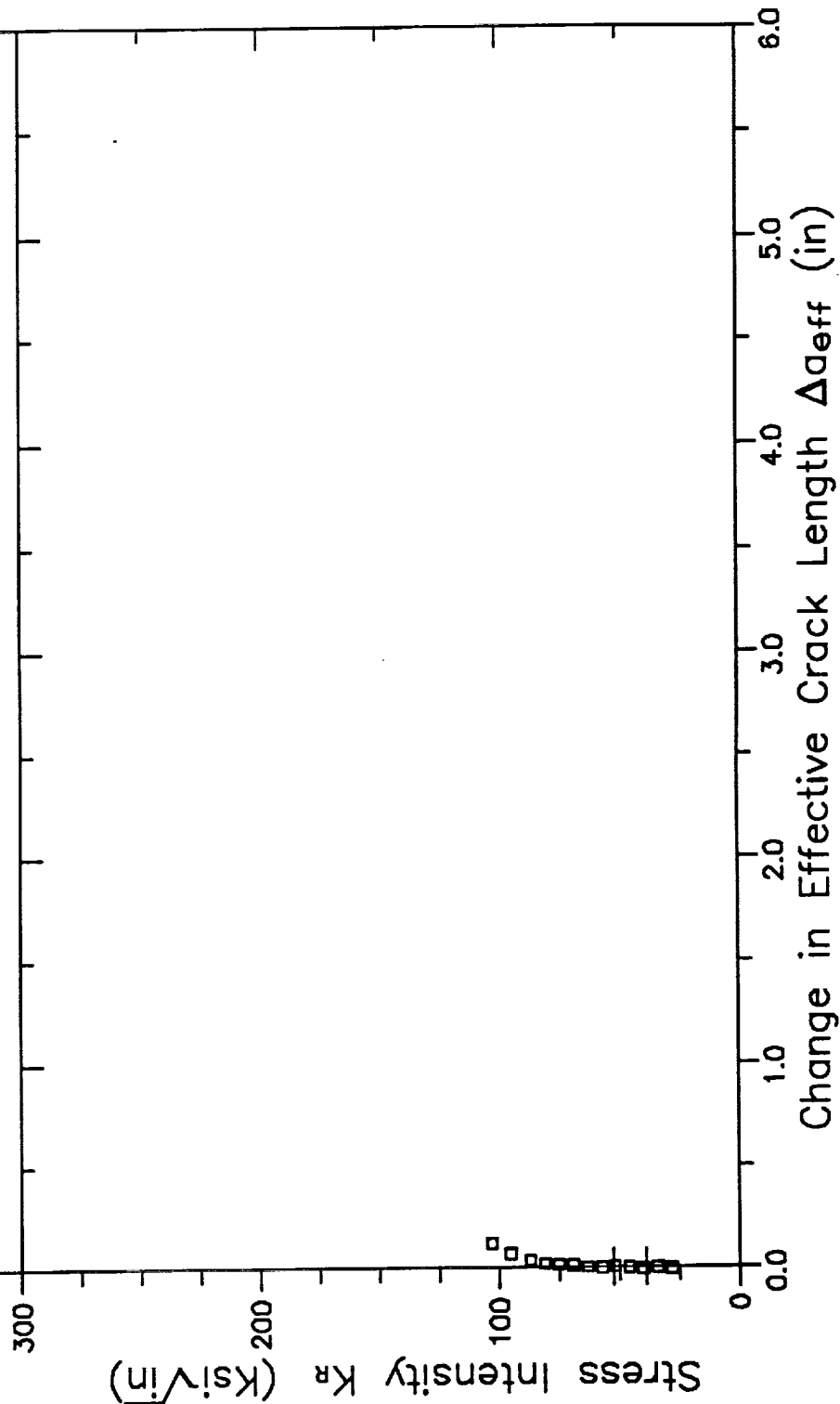
# RESISTANCE CURVE



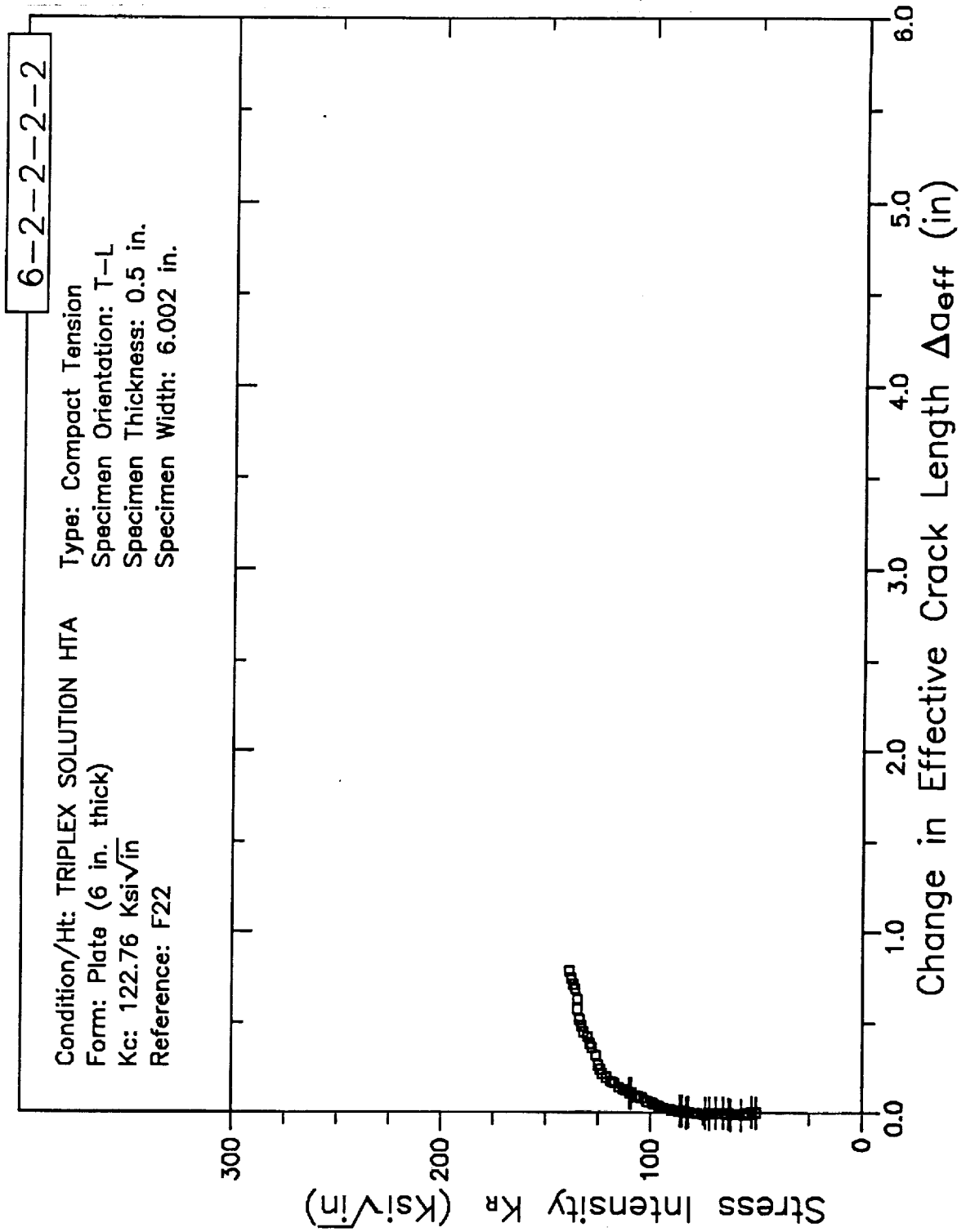
# RESISTANCE CURVE

6-2-2-2-2

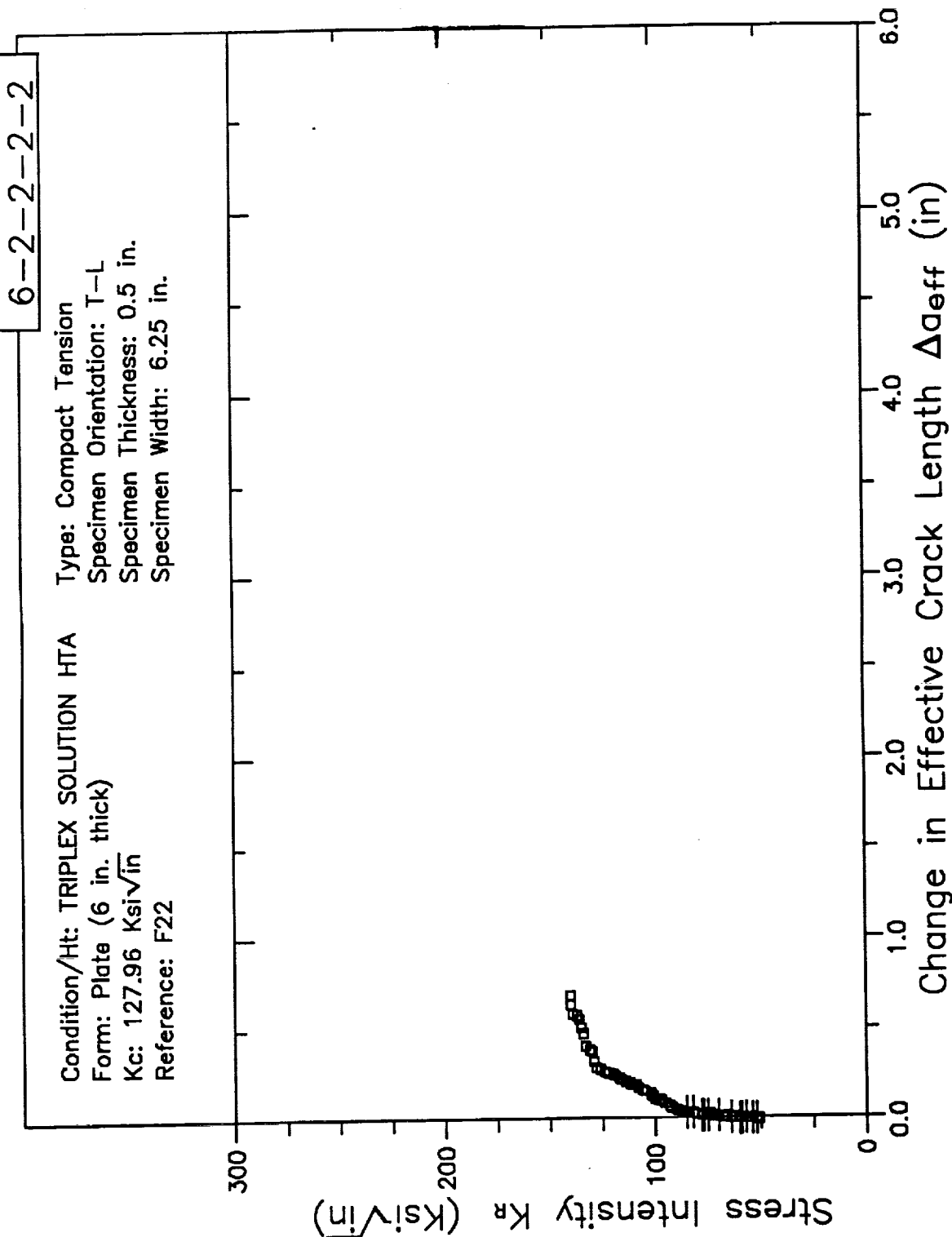
Condition/Ht: TRIPLEX SOLUTION HTA      Type: Compact Tension  
 Form: Plate (6 in. thick)      Specimen Orientation: T-L  
 Kc: 103 Ksi√in      Specimen Thickness: 0.499 in.  
 Reference: F22      Specimen Width: 6.248 in.



# RESISTANCE CURVE

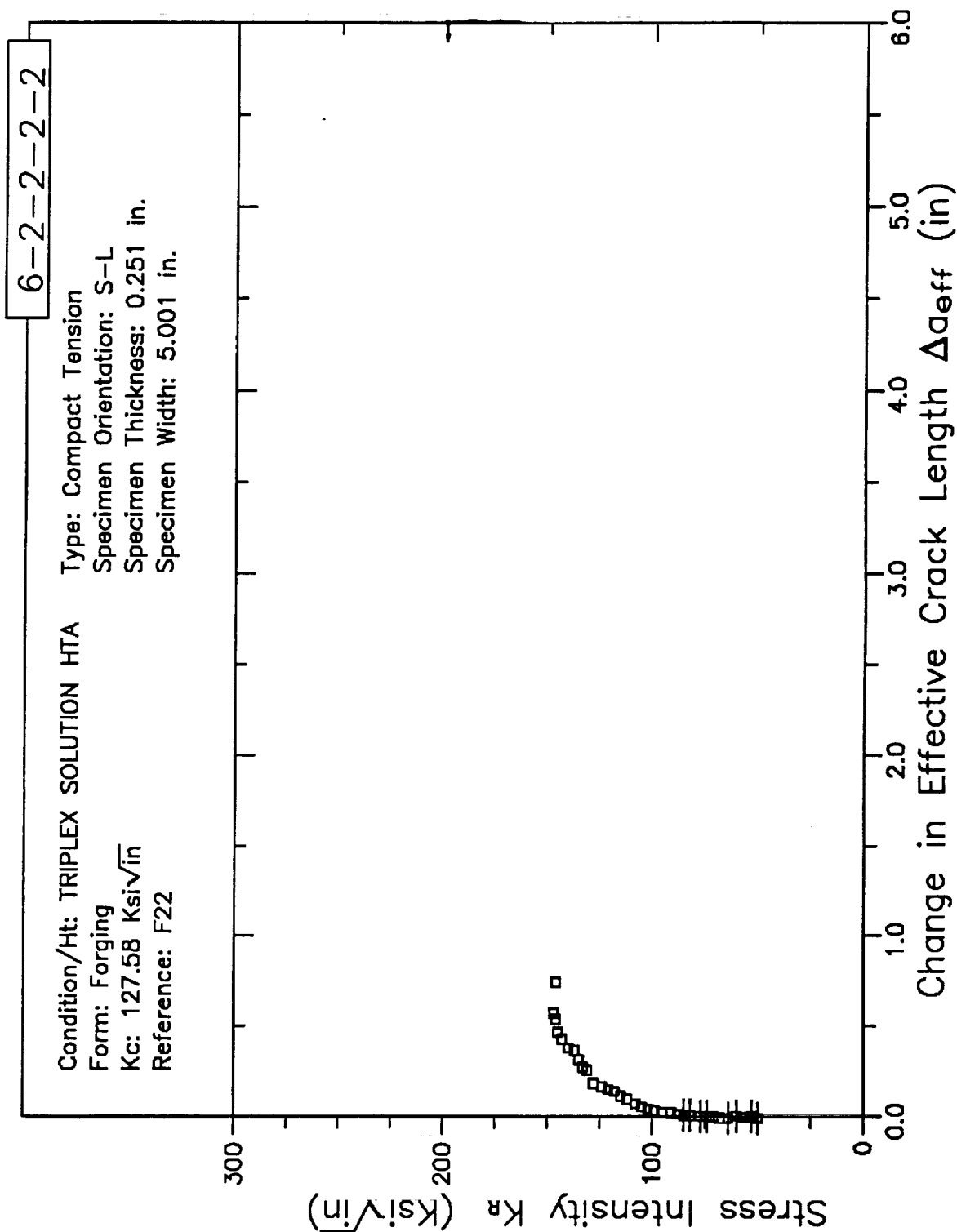


# RESISTANCE CURVE

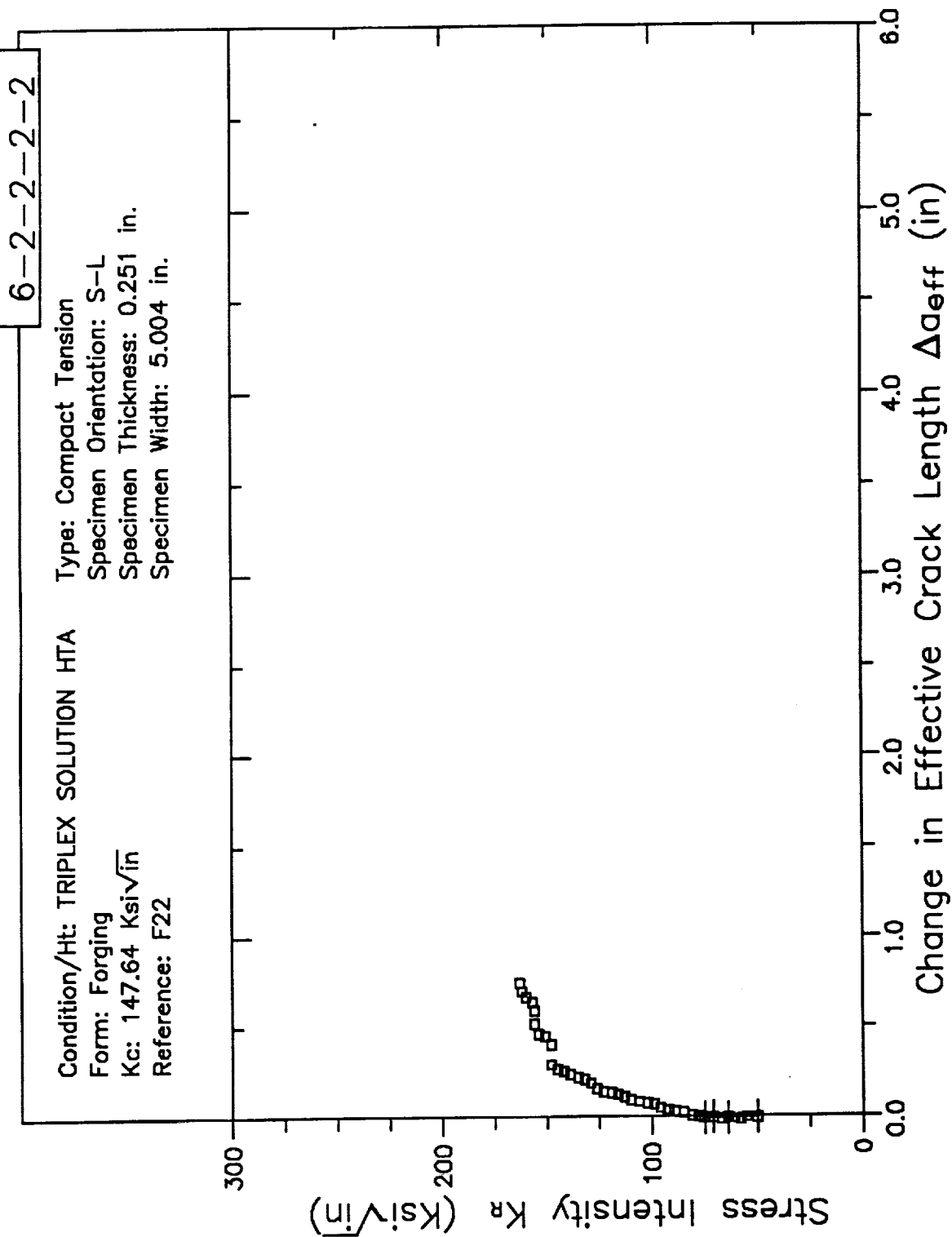




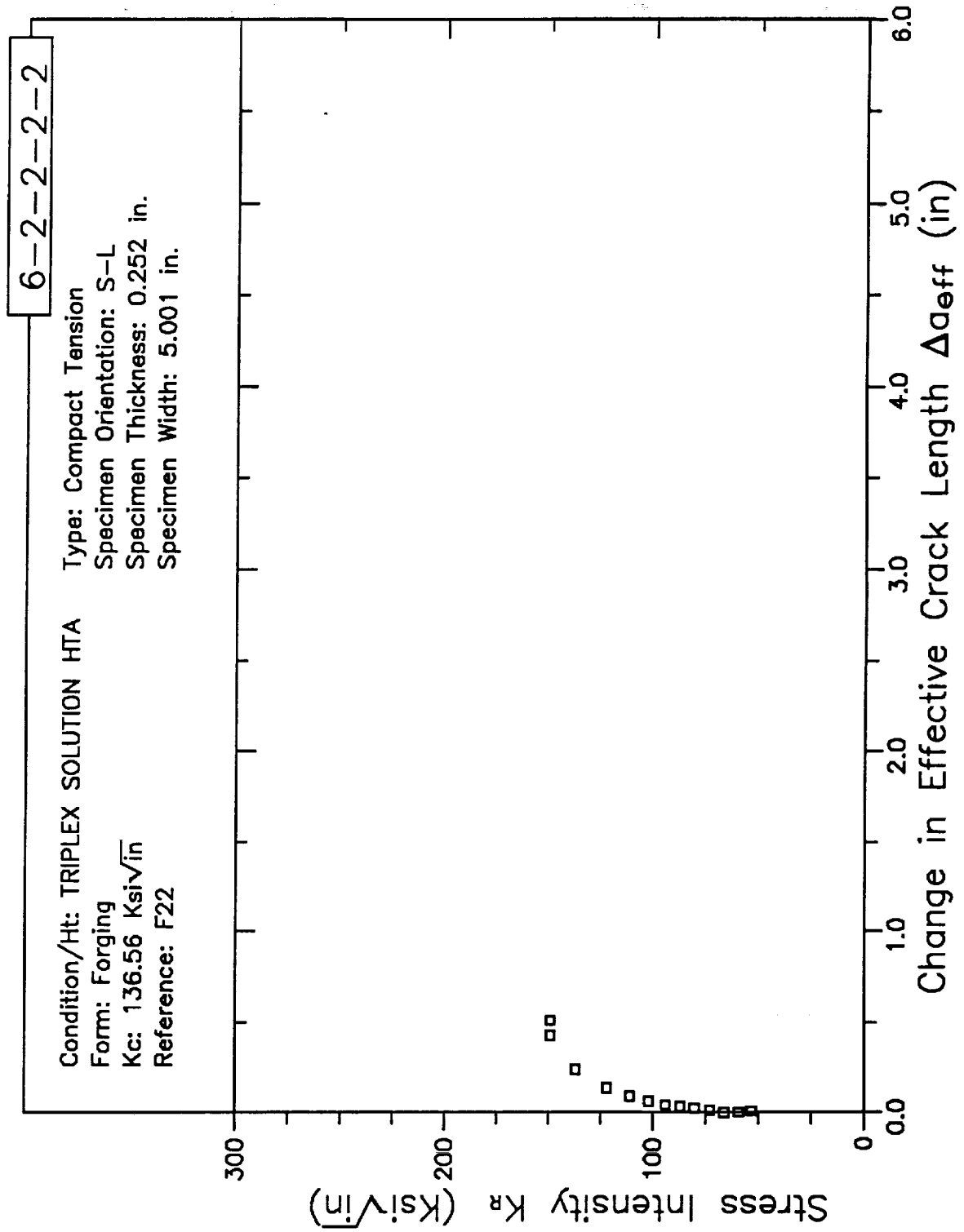
# RESISTANCE CURVE



# RESISTANCE CURVE



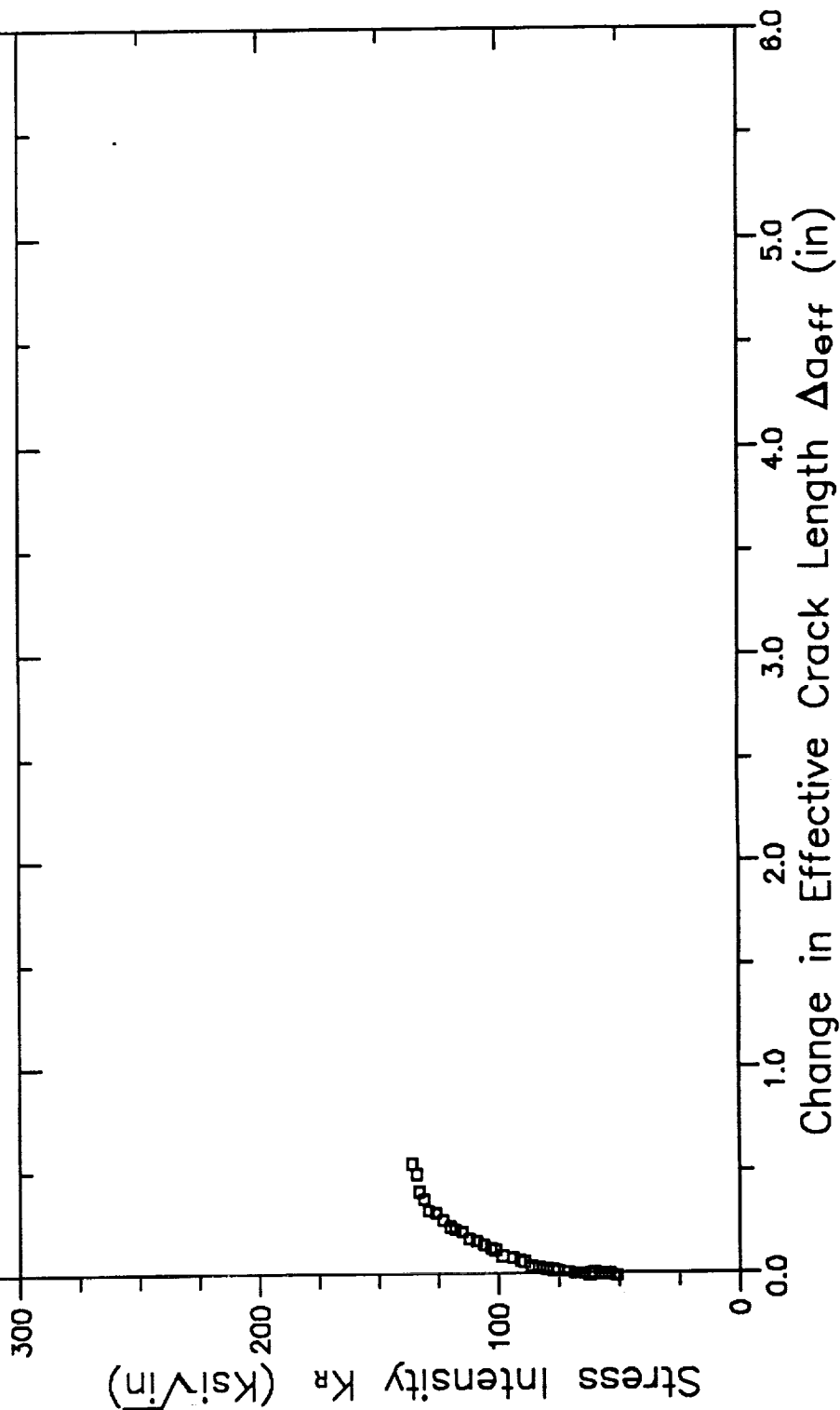
# RESISTANCE CURVE



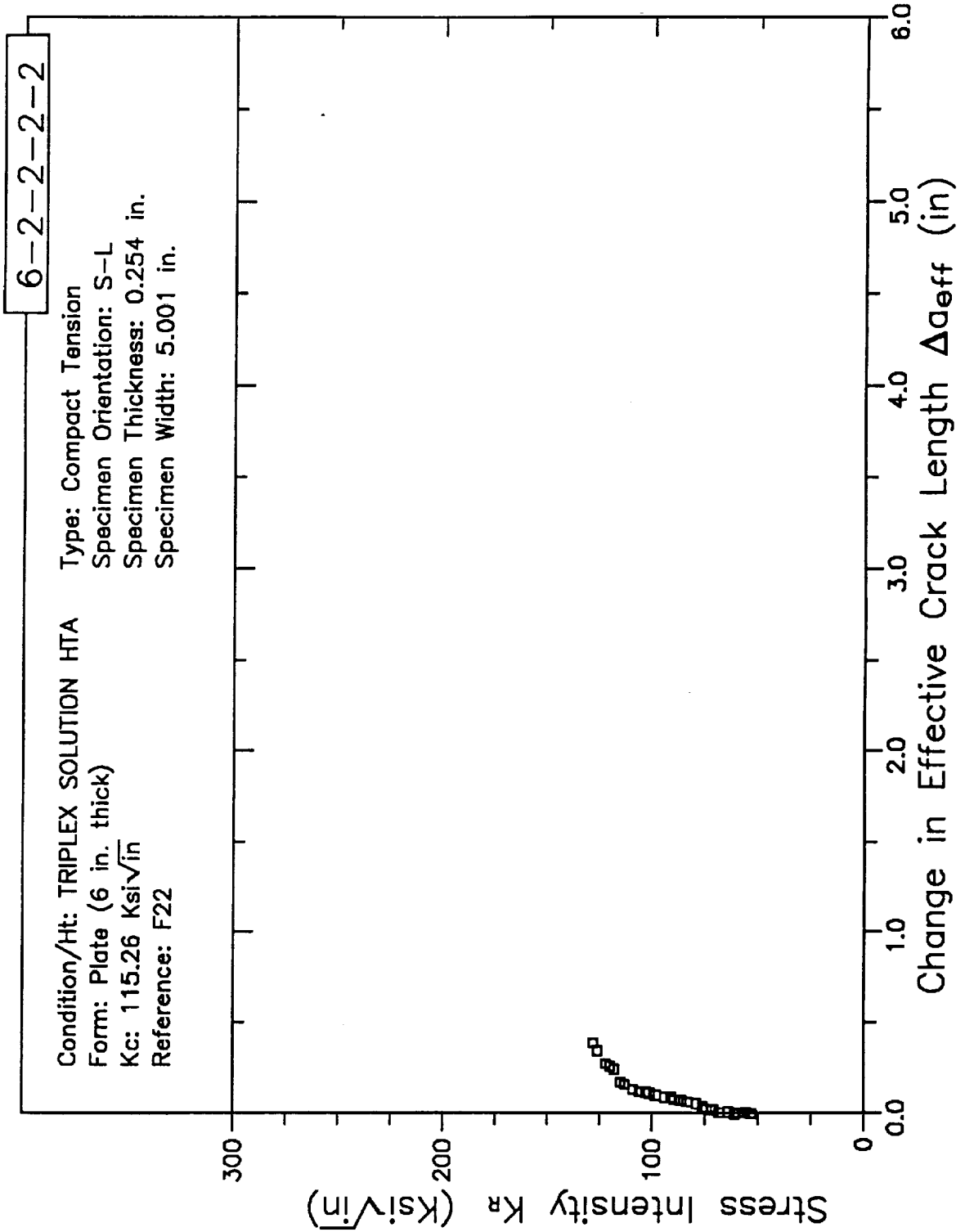
# RESISTANCE CURVE

6-2-2-2-2

Condition/Ht: TRIPLEX SOLUTION HTA      Type: Compact Tension  
 Form: Plate (6 in. thick)      Specimen Orientation: S-L  
 Kc: 128.71 Ksi√in      Specimen Thickness: 0.253 in.  
 Reference: F22      Specimen Width: 5.001 in.



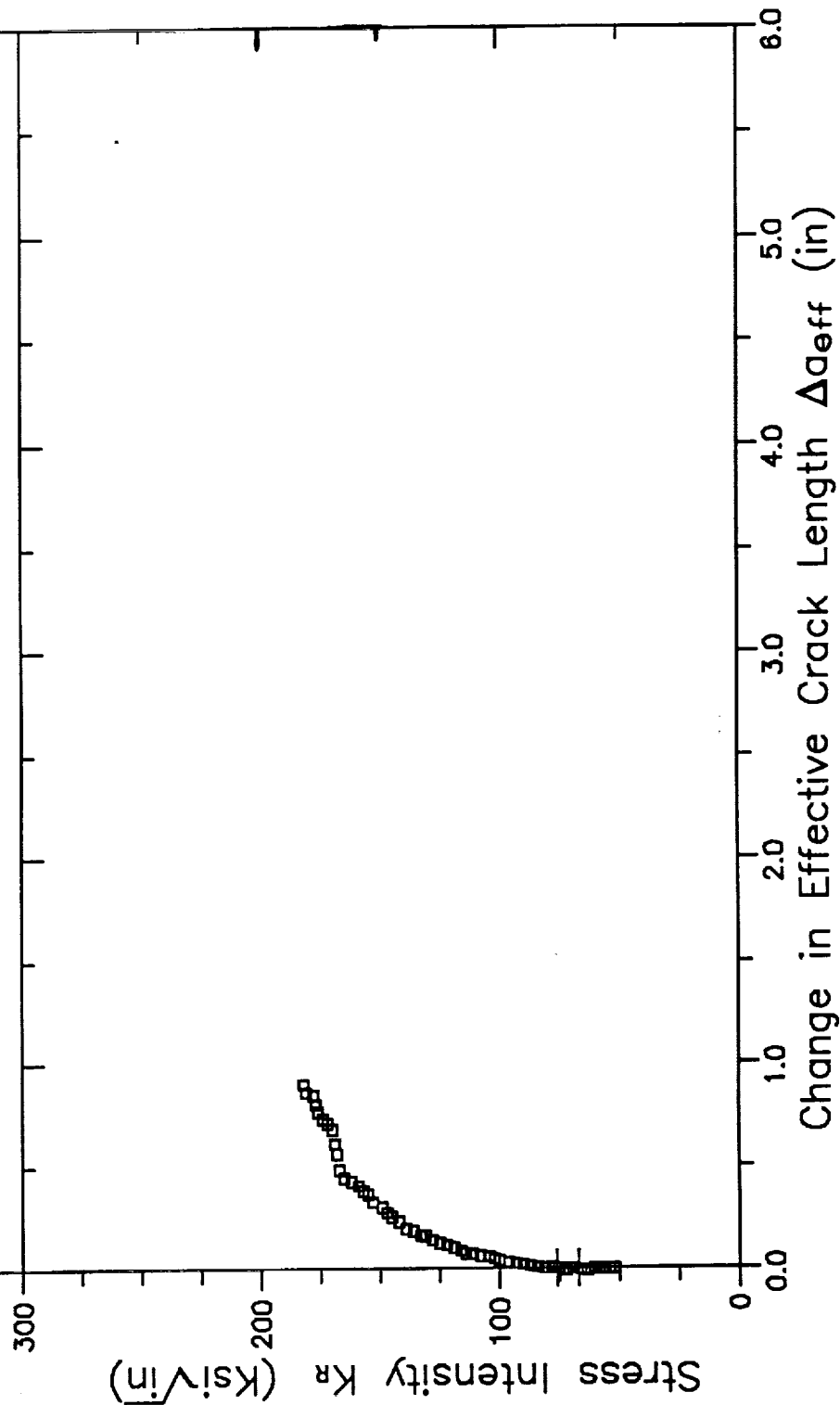
# RESISTANCE CURVE



# RESISTANCE CURVE

6-2-2-2-2

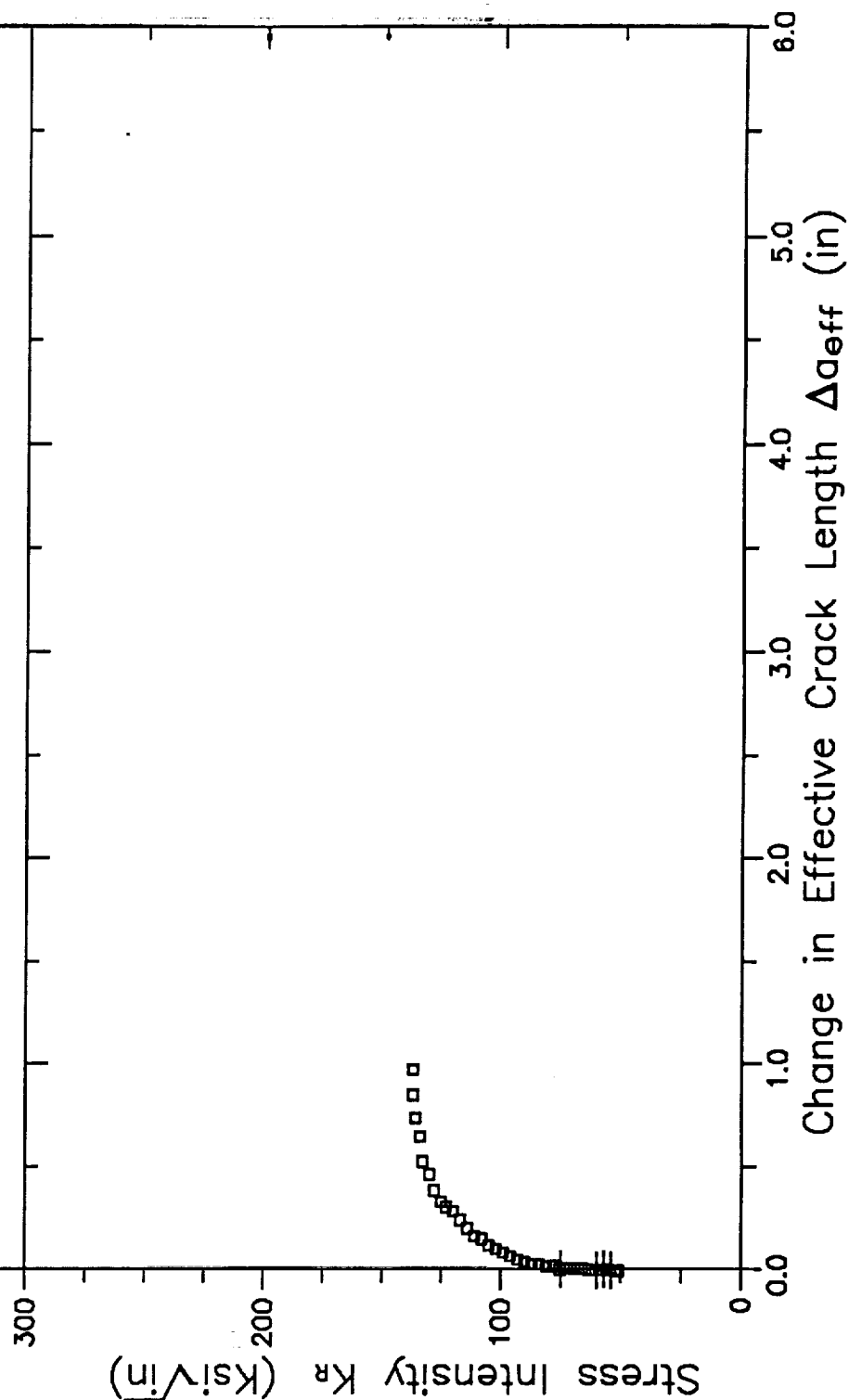
Condition/Ht: TRIPLEX SOLUTION HTA    Type: Compact Tension  
 Form: Plate (6 in. thick)    Specimen Orientation: S-L  
 Kc: 152.73 Ksi√in    Specimen Thickness: 0.254 in.  
 Reference: F22    Specimen Width: 5.001 in.



# RESISTANCE CURVE

6-2-2-2-2

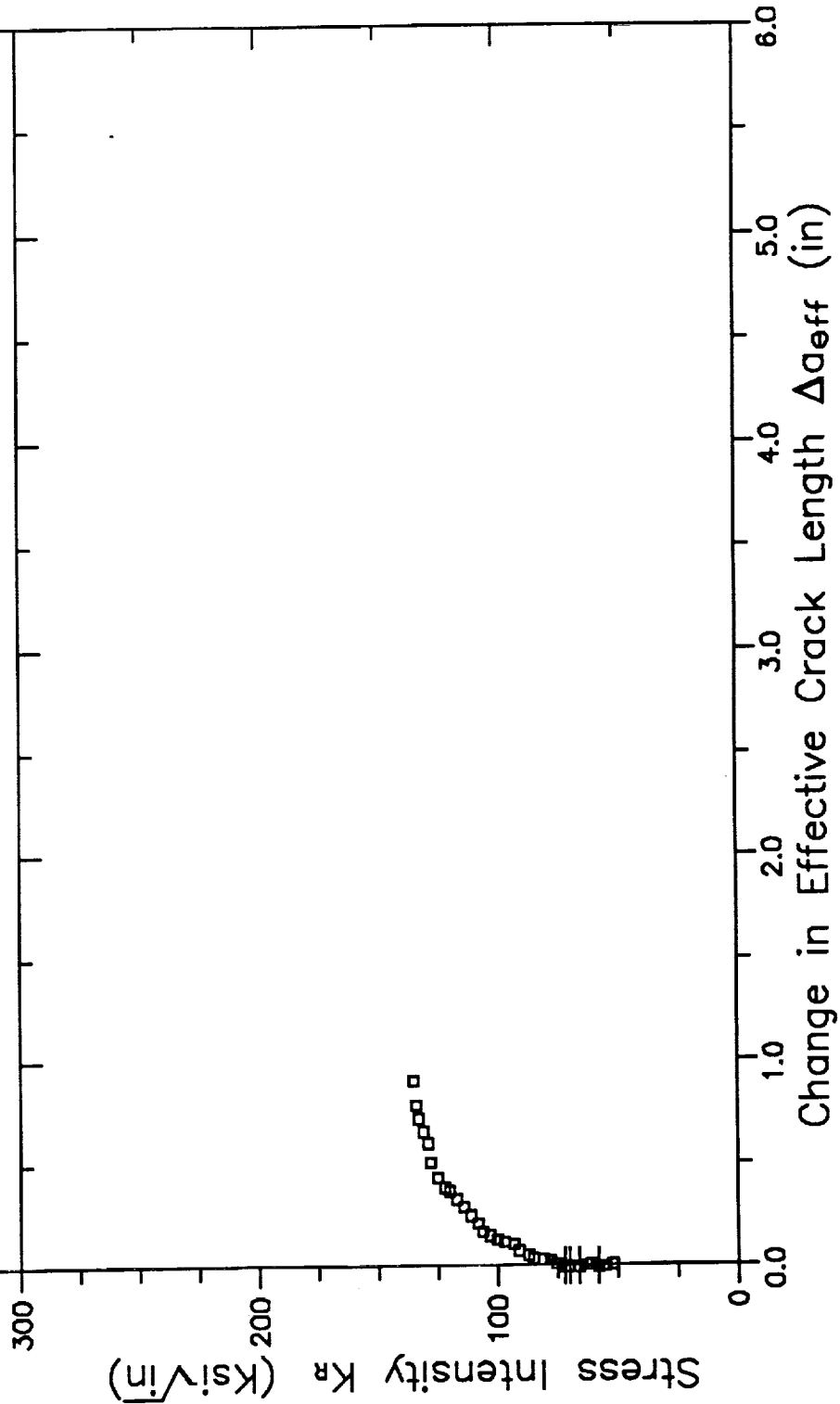
Condition/Ht: TRIPLEX SOLUTION HTA  
 Form: Plate (6 in. thick)  
 Kc: 113.97 Ksi√in  
 Reference: F22  
 Type: Compact Tension  
 Specimen Orientation: S-L  
 Specimen Thickness: 0.5 in.  
 Specimen Width: 5.001 in.



# RESISTANCE CURVE

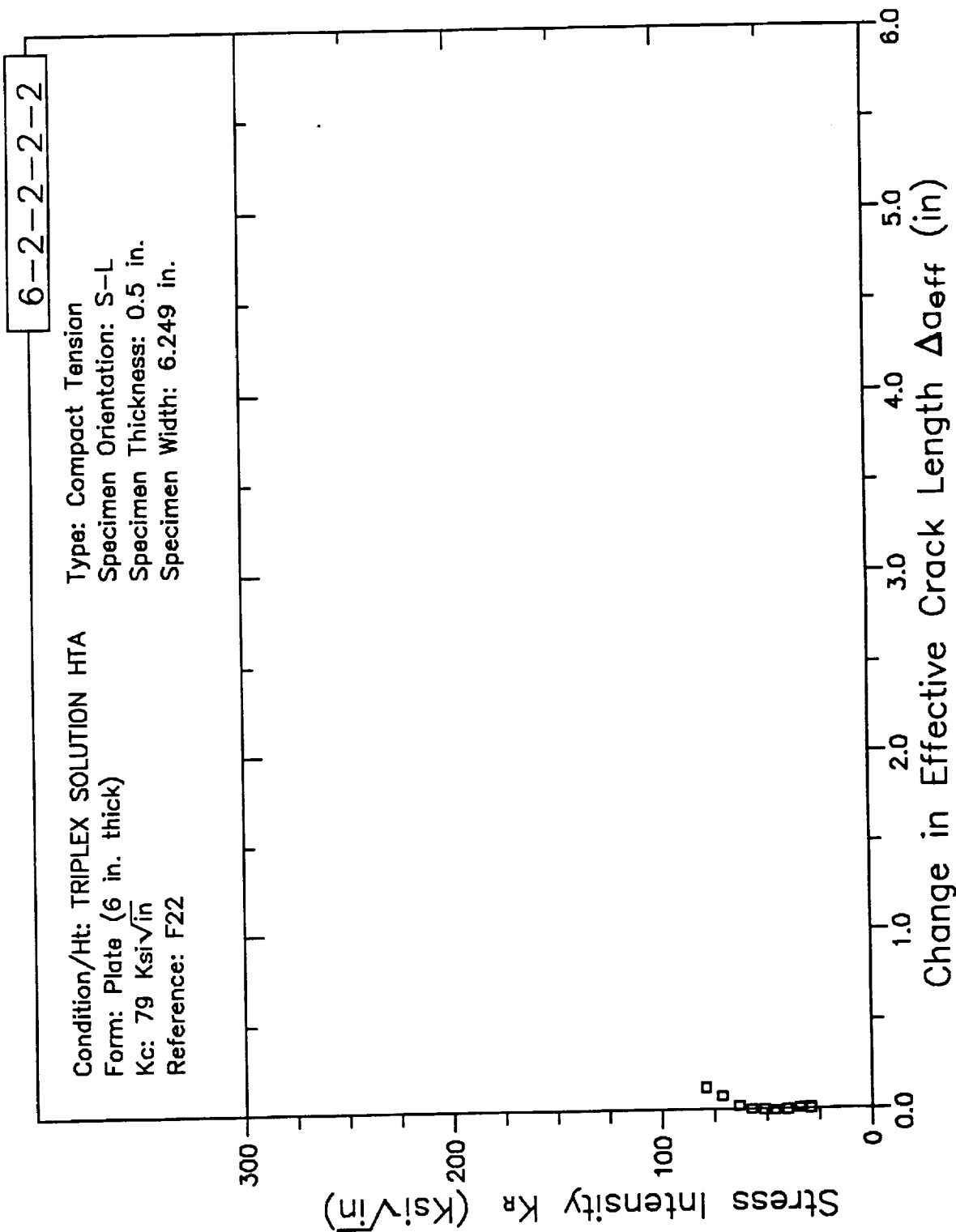
6-2-2-2-2

Condition/Ht: TRIPLEX SOLUTION HTA  
 Form: Forging  
 Kc: 111.34 Ksi√in  
 Reference: F22  
 Type: Compact Tension  
 Specimen Orientation: S-L  
 Specimen Thickness: 0.5 in.  
 Specimen Width: 5.003 in.





# RESISTANCE CURVE



# RESISTANCE CURVE

